

INSTALLATION & OPERATION GUIDE

ZR-4630

MultiZone Receiver



**Four-Source, Six-Zone, 30W Per Channel
AM/FM Receiver**



BLENDING TECHNOLOGY AND ARCHITECTURE™

Congratulations!

Thank you for purchasing the Niles ZR-4630 MultiZone Receiver, one of the most flexible and convenient audio components ever offered. The ZR-4630, like all Niles products, is built to the highest standards of quality and reliability. With proper installation and operation, you'll enjoy years of trouble-free use.

Niles manufactures the industry's most complete line of custom installation components and accessories for audio/video systems. For a free full line catalog write:

Niles, Catalog Request, P.O. Box 160818, Miami, Florida 33116-0818

TABLE OF CONTENTS

INTRODUCTION	6
FEATURES AND BENEFITS	7-8
PARTS GUIDE	9-10
R-4 REMOTE	11
SOLO™ MASTER KEYPAD MODULE AND THE NUMERIC™ ACCESSORY KEYPAD MODULE	12
SYSTEM CONFIGURATIONS	13
CONFIGURATION 1 - SIX ZONES	13
CONFIGURATION 2 - ADDING ZONES USING MULTIPLE ZR-4630'S	15
CONFIGURATION 3 - DISTRIBUTING SOURCE-COMPONENT AUDIO SIGNALS	16-17
CONFIGURATION 4 - INTEGRATING AN IR-CONTROLLED HOME THEATER	18
CONFIGURATION 5 - INTEGRATING A HOME THEATER USING AN INTELLICONTROL	19
CONFIGURATION 6 - MULTIPLE SOLO™ MASTER KEYPAD MODULES IN A ZONE	20
CONFIGURATION 7 - MULTIPLE LISTENING AREAS IN A ZONE	21
CONFIGURATION 8 - EXTERNAL AMPLIFIER IN A ZONE FOR MORE POWER	22
CONFIGURATION 9 - EXTERNAL AMPLIFIER IN A ZONE FOR MULTIPLE LISTENING AREAS	23
CONFIGURATION 10 - EXTERNAL AMPLIFIER IN A ZONE FOR MULTIPLE ROOMS	24
CONFIGURATION 11 - SYSTEM PAGING WITH AN EXTERNAL TELEPHONE SYSTEM	25
CONFIGURATION 12 - IR REPEATING FOR CONTROL OF LOCAL COMPONENTS	26
COMPONENT COMPATIBILITY	27
Infrared Command Compatibility	27
Testing for a Possible IR Command Conflict	27
Solving the IR Command Conflict if Present	27

TABLE OF CONTENTS

SOURCE POWER SYNCHRONIZATION	28
CHOOSING A SYNCHRONIZATION METHOD	29
Video Sync	29
Voltage Sync	30
Current Sensing	30
Light Sensing	31
SOURCE AND HOME THEATER SYNC STATUS	31
OPERATIONAL OVERVIEW	32
MASTER KEYS/SOURCE BUTTONS	32
Master Key/Source Button Events	33
Master Key/Source Button Operation	34
Single-Zone Operation	34
System-Wide Operation	34
OFF KEY/OFF BUTTON	34
OFF Key Events	35
OFF Key/Button Operation	35
Single-Zone OFF	35
System-Wide OFF	35
VOLUME KEYS/VOLUME BUTTONS	36
Volume Keys/Volume Buttons Operation	36
MUTE KEY/MUTE BUTTON	37
Mute Key/Mute Button Operation	37
FUNCTION KEYS/BUTTONS	38
Function Key/Button Operation for Connected Source Components	38
Function Key/Button Operation for the Built-in Tuner	39
FRONT-PANEL TUNER OPERATION	40
IDENTICAL SOURCE COMPONENTS	41
SHARED SOURCE COMPONENTS	41
OPERATING A SYSTEM WITH MULTIPLE ZR-4630's	41
OPERATION FROM THE STEREO ZONES PROVIDED BY THE ZR-4630	42

TABLE OF CONTENTS

OPERATION FROM THE HOME THEATER ZONE	42
1. Integrated Home Theater using 12V Home Theater Sync and IR Repeating	41
2. Integrated Home Theater using 12V Home Theater Sync and Niles R-4 Commands	42
3. Integrated Home Theater without Home Theater Sync and using Niles R-4 Commands	43
SYSTEM-BUSY INDICATION	43
PAGING INDICATION	43
INSTALLATION	44
CONNECTIONS	44
Connecting Speaker Wire to the Niles No-Strip Connector	44
Terminating Four-Pair Twisted Cable	45
Connecting the Solo™ Master Keypads to the Home Run of Four-pair Twisted Cable	45
Connecting Numeric™ Keypads	45
Connecting IR Sensors	46
Source-Component Power and Home Theater Synchronization Signals	47
Keypad Modules	47
System Expansion	48
IR Flashers	48
Home Theater Control System	48
12V Control Signals	48
AM/FM Antennas	48
Source-Component Audio Signals	48
Telephone Paging	48
Preamplifier Zone Outputs	48
Speakers	48
AC Power	48
Connecting an IR Sensor for Local System Control	49
Connecting an A/B Amplifier Switch for Local System Selection	50
PROGRAMMING OVERVIEW	51
Installer Programming Panel	51

TABLE OF CONTENTS

Programming Documentation	51
ZR-4630 Programming Worksheet	52
ZR-4630 Source-Component Programming Worksheet	53
Function Keys/Buttons Programming	54
Sequence Programming	54
Programming a Learning Remote for Zone Operation.	55
Programming a Home Theater Remote Control to Operate Source Components Shared with a ZR-4630	55
Method 1—Controlling Shared-Source Compts. w/IR Repeating & 12V Home Theater Status	56
Method 2—Controlling Shared-Source Compts. w/Niles R-4 Commands & 12V Home Theater Status	56
Method 3—Controlling Shared-Source Compts. w/Niles R-4 Commands & w/out 12V Home Theater Status	57
INSTALLATION SETTINGS	51
All ON/PAGE Dip Switch Settings	51
Fixed/Variable Preamplifier Switch	58
Programming Master/Slave Mode	58
Installing Zone Labels	58
Volume Settings	59
Changing Volume Settings	59
SYSTEM PROGRAMMING STEPS	60
PROGRAM EDITING STEPS	66
Source-Power Editing	66
IR-Command Editing	66
Sequence Editing	67
Storing Tuner Presets	67
Program Erasing	67
ACCESSORIES	68
TROUBLESHOOTING	70
SPECIFICATIONS	71

INTRODUCTION

Niles Audio has recognized the need for a simple to use, cost-effective multi-zone system that can provide years of listening pleasure to music-lovers. Our engineering and product development departments have joined forces to produce an innovative multi-zone receiver that incorporates six separate zones of amplifier power, a built-in AM/FM tuner, and connections for three additional audio-source components.

The ZR-4630 MultiZone Receiver is the multi-zone solution for which you have been asking. It allows you to combine keypad modules with infrared sensors and hand-held remotes for total control of your home entertainment system, providing "one-touch" system-wide control.

Now everyone in the household can be happy: One person can listen to the CD player in a bedroom, while another simultaneously listens to the radio by the pool. At the same time a third person can listen to DSS music in the den. In addition, the ZR-4630's source-component IR control is custom-programmable to provide intuitive operation for a wide range of source components.



ZR-4630 MultiZone Receiver

FEATURES AND BENEFITS

Multi-zone/Multi-source

The ZR-4630 MultiZone Receiver incorporates matrix preamplifier technology to provide as many as three source components and the built-in tuner to six listening zones simultaneously. Finally, Dad can relax to the sound of his favorite music in the den while the kids are listening to their favorite music by the pool.

12-Channel 30W Amplifier for Six Zones of Stereo Sound

The ZR-4630 MultiZone Receiver is an integrated solution for multi-zone applications. Six built-in 30W stereo amplifiers provide clear and dynamic sound for six zoned areas. The newly patented Niles no-strip connectors provide fast and reliable connections to the speaker pairs in the listening zones.

Built-in AM/FM Tuner

The ZR-4630 includes with a built-in AM/FM tuner that is available to all zones as one of four source-component selections. This high-quality tuner is programmable with 10 preset AM and 10 preset FM stations, and includes direct station access.

Central Intelligence

The design approach of the ZR-4630 MultiZone Receiver is a radical departure from that of traditional programmable keypad-controlled multi-zone systems. Instead of redundantly programming each of the individual keypads with IR commands, all IR commands are programmed and stored in the ZR-4630. The Solo™ Master Keypad Module, Numeric™ Accessory Keypad Module, and Niles IR Sensors connect to the receiver for complete system control.

Total system cost is now dramatically reduced due to shorter programming time and the low cost of the modular keypads located in each zone.

Quick and Easy Programming with PC Archiving

Manual programming is made fast and easy via push buttons and LED visual prompts that lead you step-by-step through the programming process. Additionally, all system programming can be archived on your PC for back-up and for use with pre-designed systems with Niles ZR-4630 Archiving software.

One-Touch Operation with Source Component Power Synchronization

One touch of a Master Key or Source Button initiates the ZR-4630 MultiZone Receiver to perform a sequence of IR commands for complete automation of your distributed A/V system.

Sync Inputs provided by the ZR-4630 sense if the connected source components are ON or OFF. Power commands for these source components are issued only if the source components are actually OFF, turning them on correctly, every time. The proper input for the source component is then selected and a programmed sequence of IR commands are issued (i.e., play or favorite station).

A complex mix of various brand audio/video components can be operated with ease and simplicity when using the ZR-4630.

Elegant and Intuitive User Interfaces

The Solo™ Master Keypad Module - The Solo™ Master Keypad Module is an elegant, single gang, complete control solution for the ZR-4630. Custom labeled Master Keys provide complete system activation and source selection, while a complete set of cursor keys provides basic source transport and menu control.

The Numeric™ Accessory Keypad Module - The Numeric™ Accessory Keypad Module can be included along with the Solo™ Master Keypad Module in any or all zones. This combination provides direct access to discs, tracks, stations, and channels when operating DSS receivers, CD/DVD changers, and the built-in AM/FM tuner.

FEATURES AND BENEFITS

The R-4 Remote - The R-4 Remote provides system control via an ergonomic hand-held IR remote control. Zones that have been installed with Niles IR Sensors can take advantage of the R-4 Remote, providing system control from anywhere in the room.

System-Wide Operation

The ZR-4630 MultiZone Receiver incorporates system-wide control to activate all zones to a particular source component. An ALL OFF command is also included for complete system shutdown from any zone in the system.

Paging Input for Telephone Systems

A paging input is provided for telephone systems equipped with a paging output. Audio sensing is utilized to detect the paging signal. Source components currently playing in the various zones are interrupted, enabling the paging signal to play through. If a zone is off during a page, it turns on, enabling the paging signal to play through. Front-panel switches are provided to disable this paging feature in any zones where it is not required.

12V Control Output

A control output connector provides a constant 12V DC trigger signal the moment any zone is activated. This signal can be interfaced to Voltage Triggered AC Power Strips (i.e., Niles AC-3) for the automation of source components that can only be activated via switched AC outlets.

Expandable for Larger MultiZone Systems

Up to three ZR-4630's can be combined in a single system, providing 18 zones. Source components are connected to all receivers, splitting their audio signals utilizing RCA Y-adapters or Niles AVDA-3 Distribution Amplifiers.

Program Memory Protection

The ZR-4630 MultiZone Receiver utilizes non-volatile memory for storage of its programming. This safeguards against accidental loss of the programming for the entire life of the product.

PARTS GUIDE (ZR-4630)

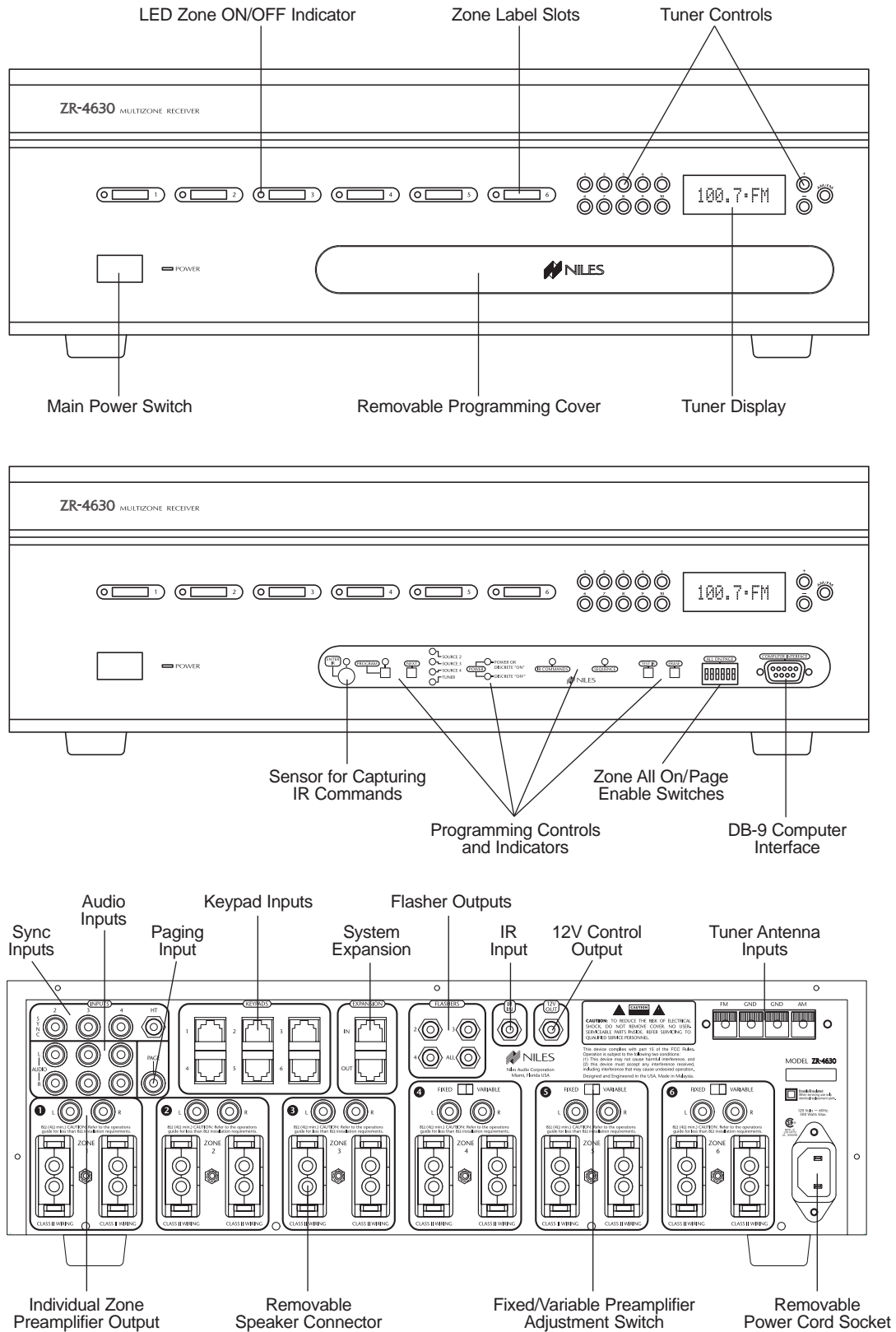


Figure 1

PARTS GUIDE (ZR-4630)

LED Zone ON/OFF Indicators

Provides individual ON/OFF indication for each zone.

Zone Label Slots

Coined slot for placing included zone labels for easy identification.

Tuner Controls

Radio station up/down, radio station preset, and AM/FM band shift buttons for tuner control.

Tuner Display

Displays the currently selected radio station and reception mode (stereo vs. mono).

Removable Programming Cover

Conceals installer only programming controls during normal operation.

Main Power Switch

Turns the main power to the receiver ON and OFF.

Note: Equipment is not completely disconnected from the main power source when power switch is in the OFF position.

Sensor for IR Capture

IR sensor for capturing IR commands for control of the connected source components.

Programming Controls and Indicators

Push buttons and LED prompts for system and IR programming.

Zone ALL ON/PAGE Enable Switches

Individual DIP switches enable or disable System Wide All ON commands and the paging feature.

DB-9 Computer Interface

Laptop connection enabling program configuration backup/downloading using ZR-4630 archiving software.

Sync Inputs

Video and voltage sensing RCA Sync Inputs 2, 3, and 4 are for detecting when a source component is on/off for reliable system activation. The HT mini plug Sync Input senses voltage for determining the on/off status of a Home Theater sharing source components with the ZR-4630.

Paging Input

A mono RCA input for a paging signal from a telephone system.

Keypad Inputs

Six female RJ-45 jacks for the connection of the IntelliPad Ci® Master Keypad Modules.

System Expansion

Two female RJ-45 jacks for connecting multiple receivers together in larger multi-zone systems.

Flasher Outputs

Three 3.5mm jacks provide an output connection for IRC-2P MicroFlashers™, one for each connected source component. A fourth is designed for the IRC-1P FloodFlasher™.

IR Input

A single 3.5mm jack provides an input connection for IR commands sent from a Home Theater. These IR commands are used for control of source components shared with a ZR-4630.

12V Control Output

A single 3.5mm jack provides a 12V DC trigger signal for use with voltage-triggered AC power strips (i.e., Niles AC-3) to control source components requiring activation via a switched AC outlet.

Tuner Antenna Inputs

Spring-loaded, bare-wire jacks provide connections for the included AM and FM antennas.

Audio Inputs

Three pairs of stereo RCA jacks provide input connections for source components.

Individual Zone Preamplifier Outputs

Six pairs of stereo RCA jacks provide output connections for external amplifiers used instead of, or in conjunction with, the ZR-4630 built-in amplifiers.

Fixed/Variable Preamplifier Output Adjustment Switch

Two-position switches, included for zones 4, 5, and 6, provide the ability to change the individual preamplifier outputs to either a variable or a fixed signal.

Removable Speaker Connector

Niles' patented No-Strip Output Terminal provides connection to speakers in the listening zones.

Removable Power Cord

An IEC removable power cord provides for easy handling during installation.

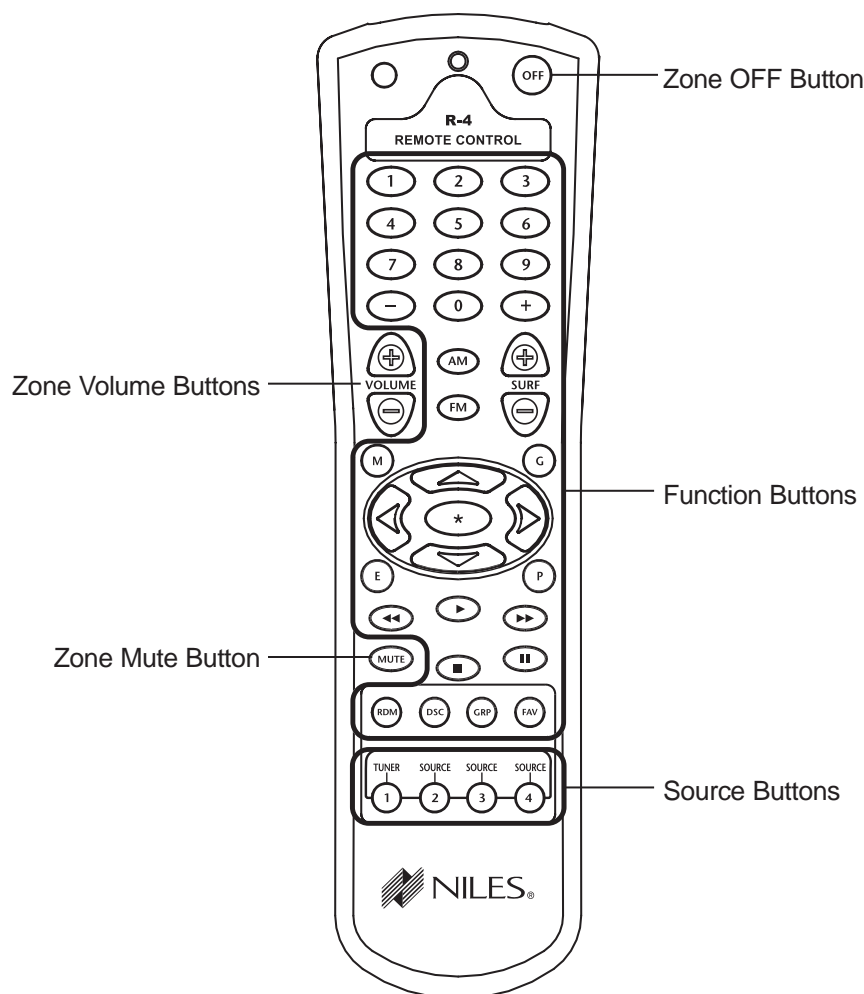


Figure 2

Source Buttons

A quick tap of any of these buttons causes the zone to turn on and a source component to be selected. Pressing and holding these buttons for longer than three seconds causes all enabled zones to turn on. Also, all zones are selected to the same source component.

Zone OFF Button

A quick tap of this button turns your specific zone off. Pressing and holding this button for longer than three seconds causes all zones to turn off.

Zone Volume Buttons

A continuous press of these buttons raises or lowers the volume in your specific zone. Pressing these buttons also restores sound in a zone that is currently muted.

Zone Mute Button

A quick tap of this button mutes the sound in a zone. A quick tap of this button restores sound in a zone that is currently muted.

Function Buttons

Pressing these buttons issues the individual IR commands programmed for control of the connected source components.

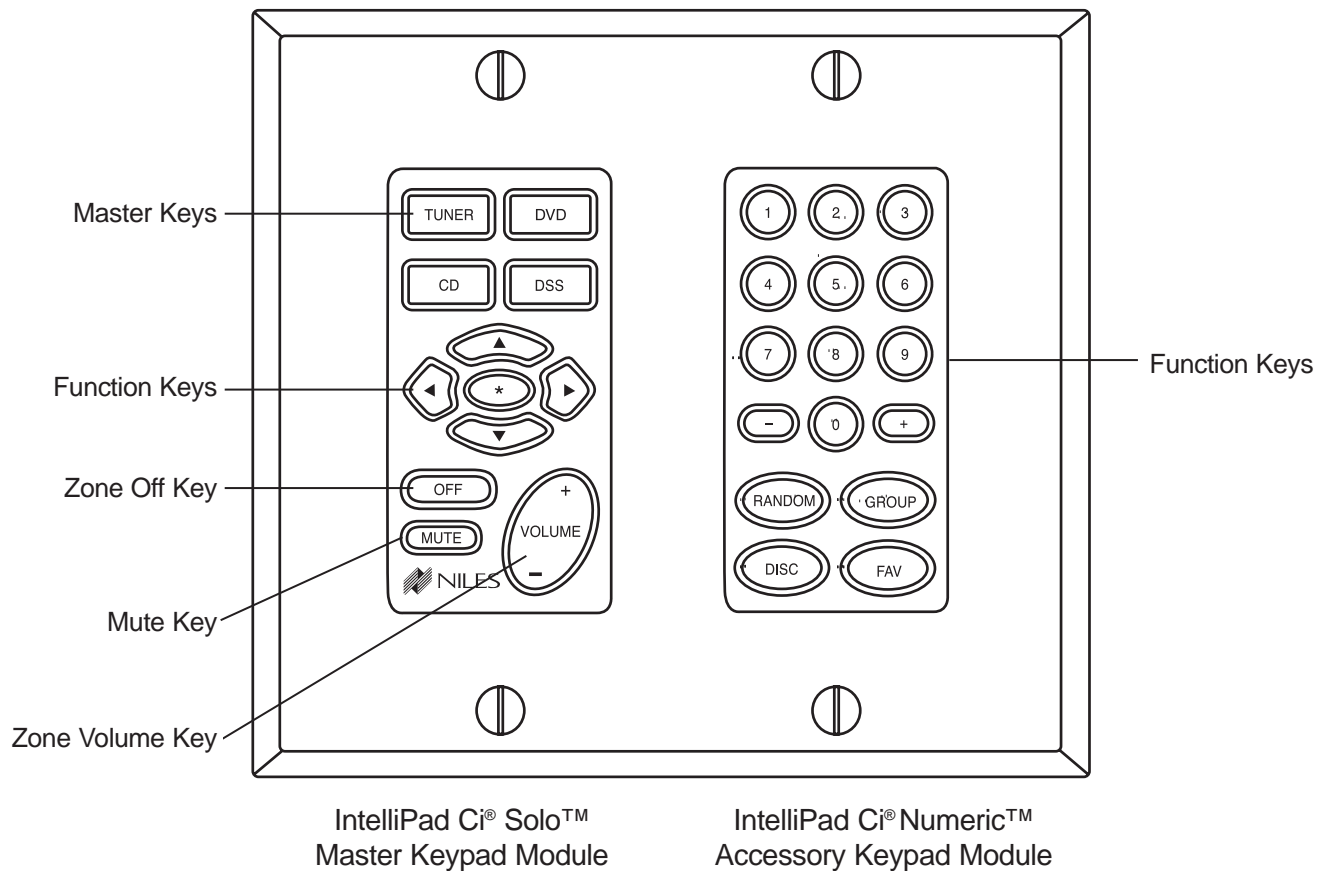


Figure 3

Master Keys

A quick tap of any of these keys causes the zone to turn on and a source component to be selected. Pressing and holding these keys for longer than three seconds causes all enabled zones to turn on. Also, all zones are selected to the same source-component.

Zone OFF Key

A quick tap of this key turns your specific zone off. Pressing and holding this button for longer than three seconds causes all zones to turn off.

Volume Keys

A continuous press of these keys raises or lowers the volume in your specific zone. Pressing these keys also restores sound in a zone that is currently muted.

Zone Mute Key

A quick tap of this key mutes the sound in a zone. A quick tap of this key restores sound in a zone that is currently muted.

Function Keys

Pressing these keys issues the individual IR commands programmed for control of the connected source components.

SYSTEM CONFIGURATIONS

CONFIGURATION 1 - SIX ZONES

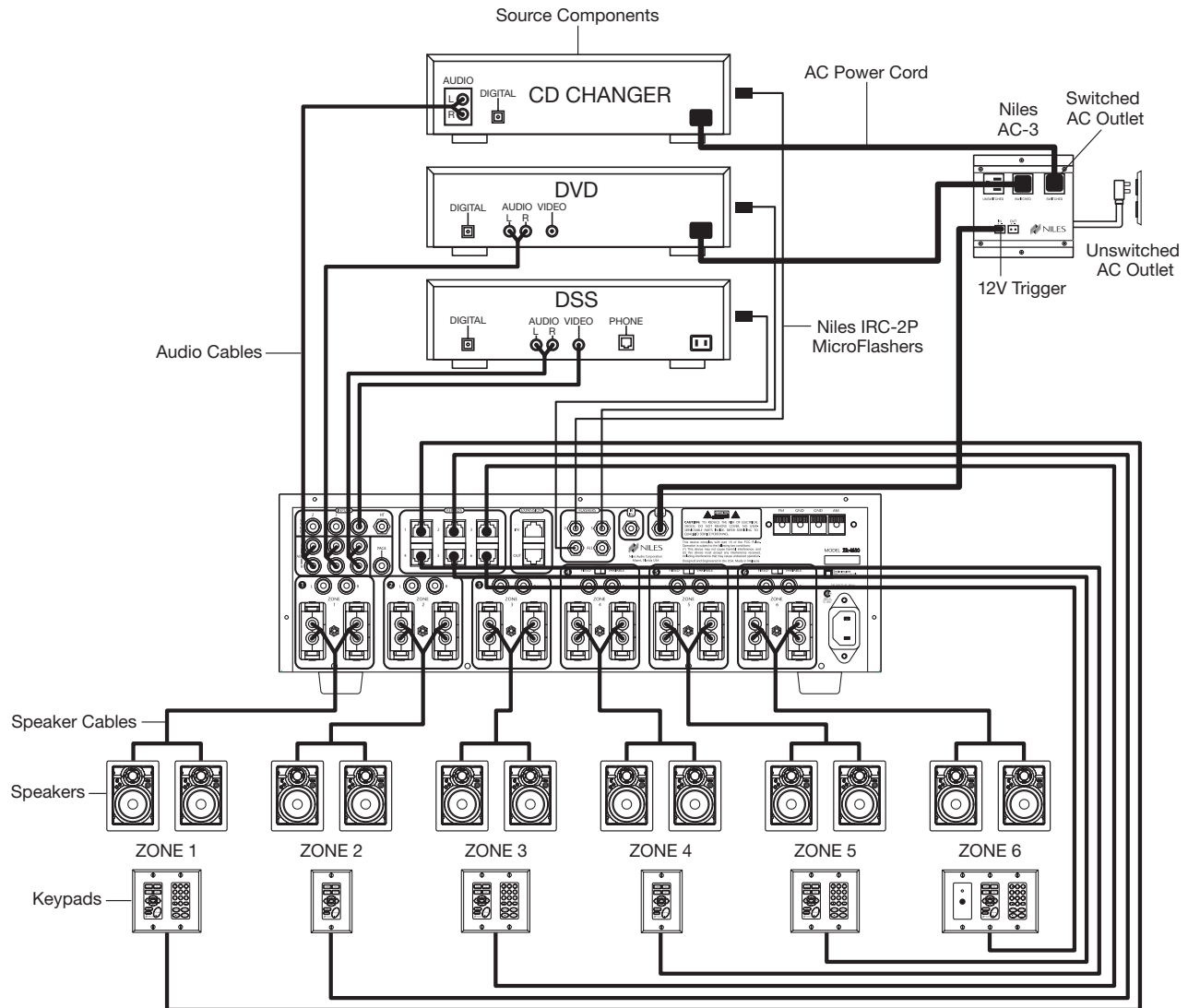


Figure 4

This is the simplest of the ZR-4630 configurations (see Figure 4). It depicts one Niles ZR-4630 MultiZone Receiver installed to provide sound to six listening zones.

Each zone consists of one room with one pair of speakers. One Solo™ Master Keypad Module is included in each zone for user control. Numeric™ Accessory Keypad Modules and an IR Sensor are added to specific zones as an option.

Source Components

The ZR-4630 has RCA audio inputs for connecting three external source components. In addition to the built-in AM/FM Tuner, three source components can be selected by each of the six zones.

With this configuration, a user in one zone can listen to one source component while another user in a different zone listens to a different source component (i.e. the CD can be selected in Zone 1 while the tuner is selected in Zone 2). Additionally, each of the six zones can be set to an individual volume level. If more than one zone chooses the same source component, IR control of that source component is shared between the zones.

SYSTEM CONFIGURATIONS

Keypads and IR Sensors

Keypads and IR sensors enable the user to control the Niles ZR-4630 MultiZone Receiver and its connected source components. Source component IR commands are programmed into the Niles ZR-4630 MultiZone Receiver. These commands are then triggered when the user presses a keypad button or issues a Niles IR command to an IR sensor.

Each zone on the ZR-4630 has a corresponding RJ-45 keypad connector that is used to connect one Solo™ Master Keypad Module. Each Solo™ Master Keypad Module can be mated with one optional Numeric™ Accessory Keypad Module using an included jumper cable (see Connections, Figure 33). The Solo™ Master Keypad Module connects to the ZR-4630 with a “home run” of four-pair twisted cable, terminated with RJ-45 connectors.

An IR Sensor can be included in any zone and connects directly to the Solo™ Master Keypad Module (see the Installation section of this manual for more details). A three-wire to RJ-45 adapter is available from Niles (see Accessories) for IR Sensors installed with two-conductor shielded cable rather than four-pair twisted cable.

Adding an IR Sensor enables the Niles R-4 Remote to control the ZR-4630 and the connected source components. In addition, a source component's actual IR commands (i.e., provided by the component's original remote control or a learning remote control programmed with these IR commands) can be used with the IR sensor to control the source components.

Important Note: The ZR-4630 does not provide individual operation of identical source components when using a source component's factory remote through an IR Sensor (see Identical Source Components on page 41 for more details).

Source-Component Automation

There are two methods of controlling the power ON/OFF of the source components.

1. **Synchronized IR** - In Figure 4, the DSS receiver's power ON/OFF is synchronized via a video signal connected to the ZR-4630. When the Master Key/Source Button for the DSS is pressed, the ZR-4630 checks for a video signal at the Sync Input corresponding to the DSS. **The ZR-4630 issues the power command to turn the DSS ON only when there is no video signal present and the DSS is OFF.**

When the Off Key/Button is pressed in a zone, the ZR-4630 checks to see if any other zones are ON (including the Home Theater Zone sharing sources). The power command for turning the DSS OFF is issued only if that zone is the last zone turning OFF in entire system and there is a video signal present at the Sync Input corresponding to the DSS.

Important Note: RCA Sync Inputs also can detect 12V for use with Niles external sensing devices, (i.e. the LS-1 Light Sensor and the APC-2 Current Sensing Device). See Connections on page 44 for more information.

2. **Latching Power** - In Figure 4, AC power to the DVD and CD changer is turned on and off via the switched AC outlets of a Niles AC-3. The AC-3 is activated by the 12V Control Output from the ZR-4630 when any one of the six zones is ON (including the Home Theater Zone sharing sources). The built-in AM/FM tuner is also turned ON when one of the six zones is ON.

Each Master Key on the Solo™ Master Keypad Module and its respective source component are programmable with a sequence of IR commands. Commands included in the sequence are typically the Play or Channel commands to start a source playing or to select a particular music or radio station after the source has been selected.

Flasher Outputs

Niles IRC-2P MicroFlashers™ connect to the numbered flasher outputs on the rear panel of the Niles ZR-4630 MultiZone Receiver. **Flashers send IR commands to the individual source components for control.** An IRC-1P Flooding Flasher can be connected to the Flasher output labeled ALL to control more than one source component.

Speakers

Each zone has “home run” speaker cables from the location of the speakers for connection to the built-in zone amplifier. Connections are made to the ZR-4630's speaker output terminals utilizing Niles' patented no-strip speaker connectors.

SYSTEM CONFIGURATIONS

CONFIGURATION 2 – ADDING ZONES USING MULTIPLE ZR-4630'S

More than one ZR-4630 can be used if the system requires more than six zones. A maximum of three ZR-4630's, providing up to 18 zones, can be combined to create a larger multi-zone/multi-source system. One ZR-4630 is designated as the Master and the others as Slaves (see Installation Settings on page 58 for more details).

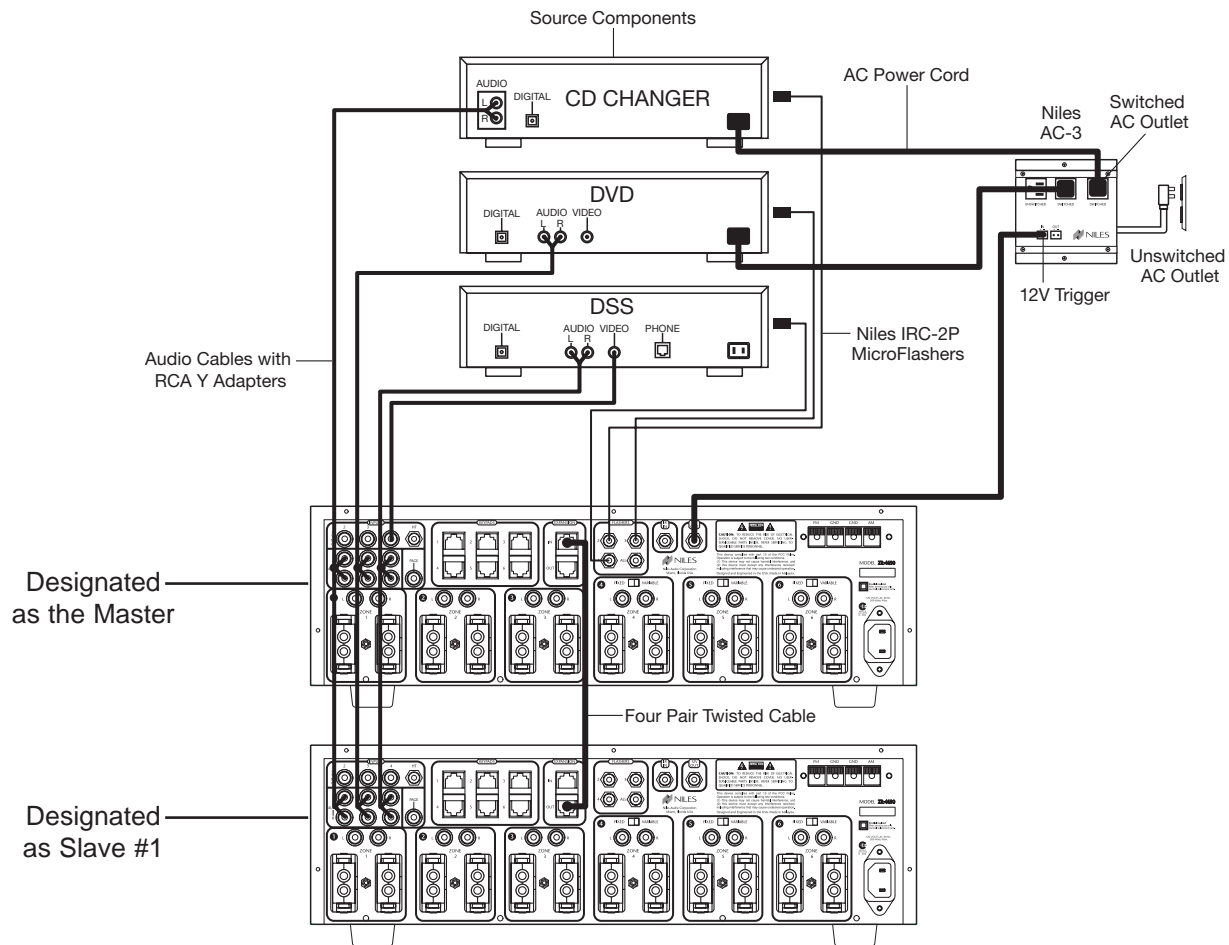


Figure 5

As shown in Figure 5, a four-pair twisted cable connecting the expansion ports of the two ZR-4630's facilitates communication between them. This communication enables all zones provided by both ZR-4630's to obtain control of the shared-source components (which are always connected to the Master). Also, system-wide commands can be issued from any zone (i.e. All Zones ON/OFF).

Sharing Source Components with Two ZR-4630's

The Niles ZR-4630 MultiZone Receivers (Figure 5) share the audio signal from the source components via RCA Y-adapters. Audio signals are connected to both ZR-4630's.

Note: When sharing source components with a third ZR-4630 (for an 18-zone system) or with a Home Theater system, refer to Configuration 3.

Source-component control (Figure 6) is accomplished via the programming in the master ZR-4630. All Slave ZR-4630's in the system must be left unprogrammed except for tuner preset stations. All Flasher and Sync Input connections for the shared source components are made to the Master ZR-4630. Keypad/Source Button commands and zone On/Off status are communicated to the Master ZR-4630 using the System Expansion In/Out connections, providing coordinated control of all source-components.

SYSTEM CONFIGURATIONS

CONFIGURATION 3 – DISTRIBUTING SOURCE-COMPONENT AUDIO SIGNALS

When sharing source components with three ZR-4630's (see Figure 6) or two ZR-4630's and a Home Theater system (see Figure 7), a Niles AVDA-3 Audio/Video Distribution Amplifier is required for each source.

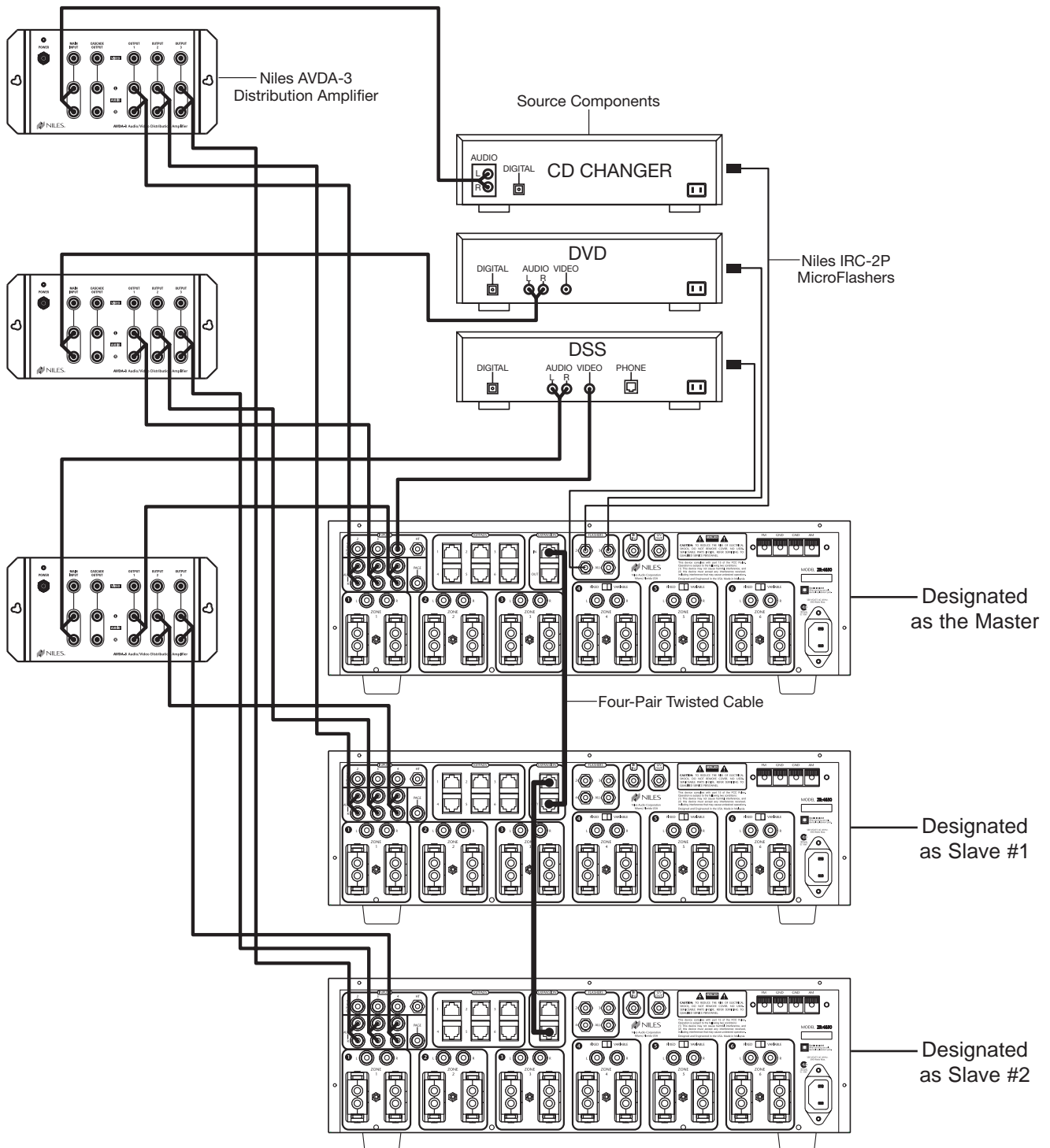


Figure 6

SYSTEM CONFIGURATIONS

CONFIGURATION 3 – DISTRIBUTING SOURCE-COMPONENT AUDIO SIGNALS

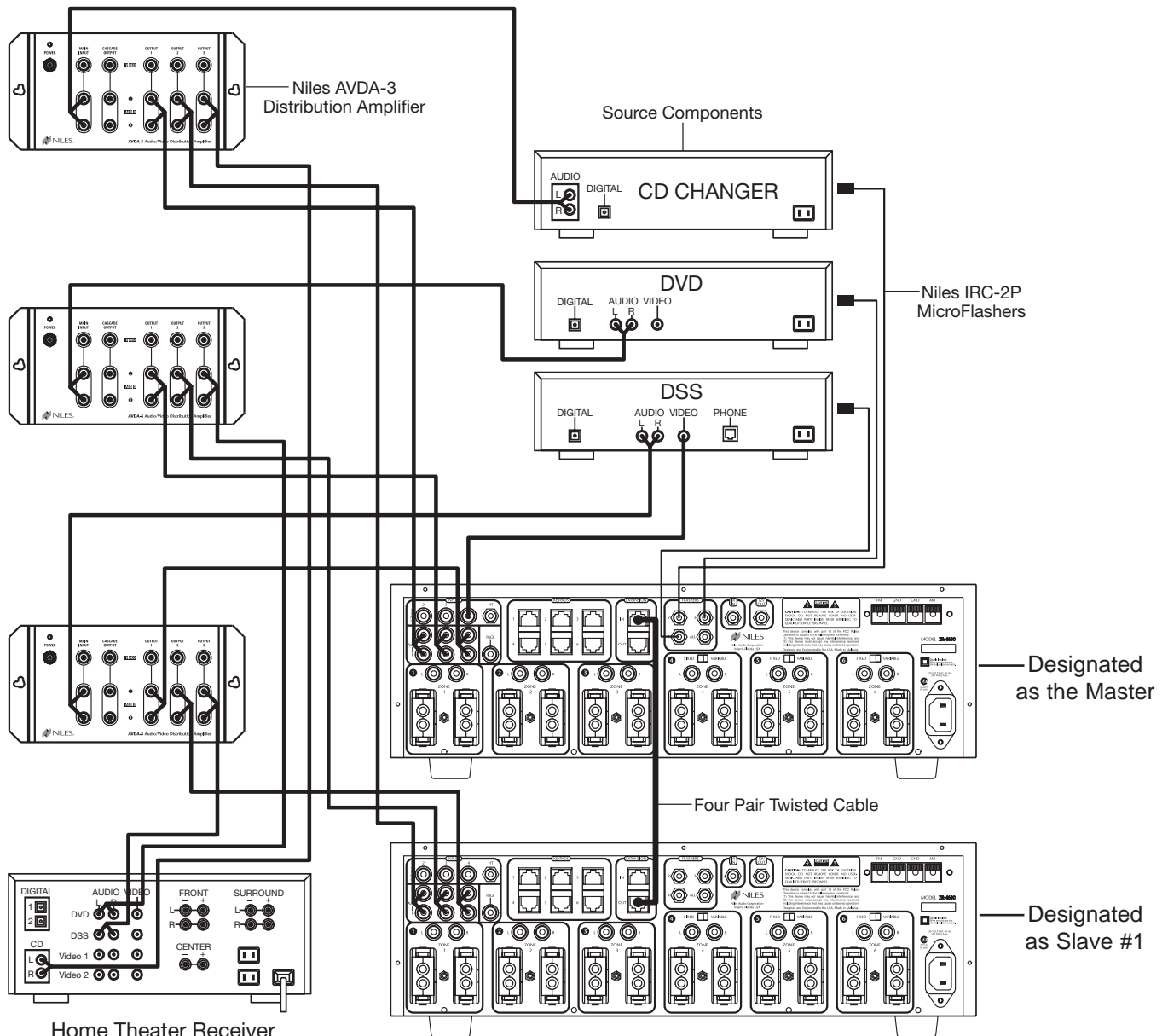


Figure 7

If you are installing three ZR-4630's with an integrated Home Theater Zone (refer to Figure 8), the cascade output on each AVDA-3 may be connected to the third ZR-4630.

Important Note: An AVDA-3 is required whenever you are sharing source components with a Home Theater receiver that shorts its audio inputs. (Some Home Theater receivers short their audio inputs when their power is off or the input is not currently selected.)

SYSTEM CONFIGURATIONS

CONFIGURATION 4 – INTEGRATING AN IR-CONTROLLED HOME THEATER

An IR-controlled Home Theater surround-sound receiver can be integrated to share source components in a system with the ZR-4630.

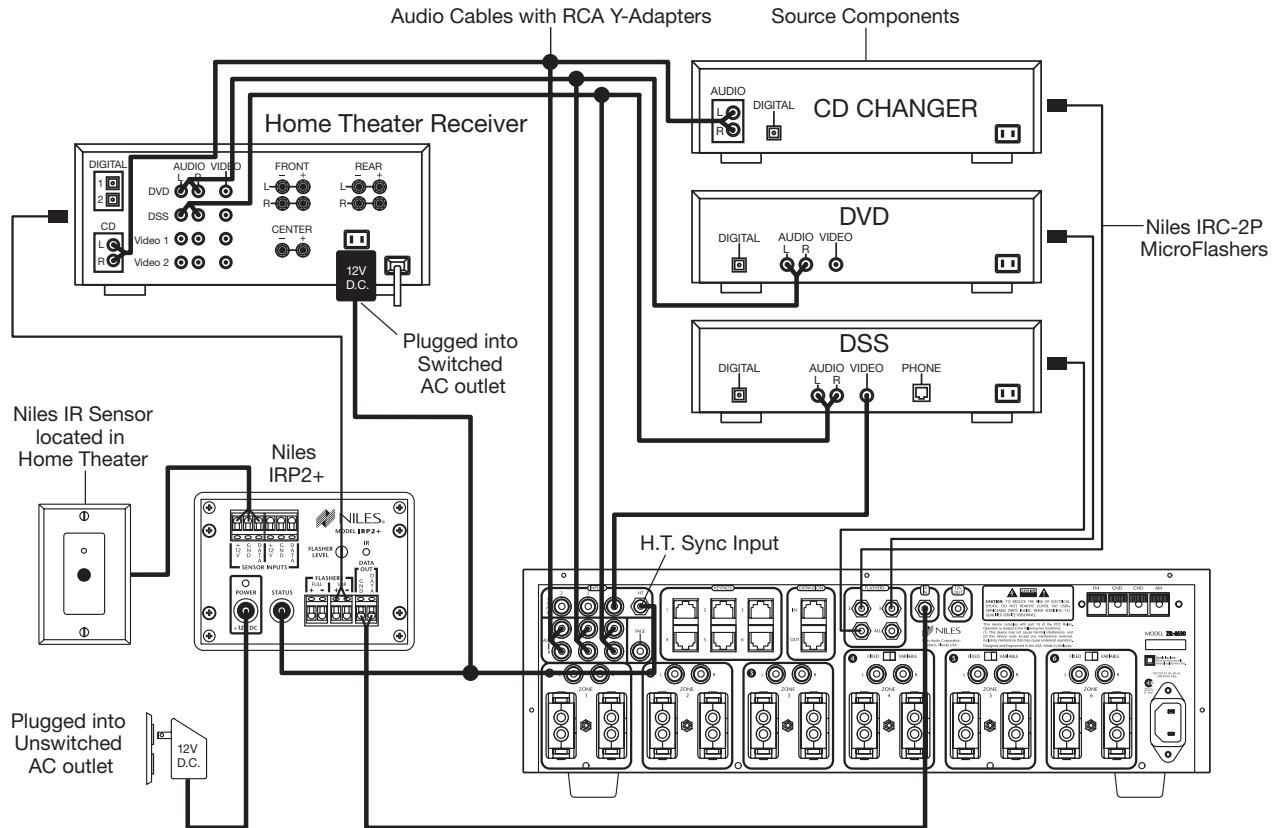


Figure 8

Distributing Audio Signals

Audio signals for the shared source components are connected to both the ZR-4630 and the Home Theater receiver using RCA Y-adapters (Figure 8).

Important Note: If the Home Theater Receiver has shorting audio inputs, a Niles AVDA-3 Distribution Amplifier must be used in place of the RCA Y-adapters (refer to Figure 7).

Shared Source Component Control

The DATA output from the Home Theater IR repeater (Figure 8) is connected to the IR Input of the ZR-4630. The Home Theater IR remote control is now able to control the shared source components.

A 12V Sync signal is provided from the Home Theater to the Home Theater Sync Input to provide the ZR-4630 with the On/Off status of the Home Theater. This status enables the ZR-4630 to provide coordinated control of the shared source component's power ON/OFF.

Important Note: When issuing the source component's actual IR commands from the Home Theater remote control, all IR commands are passed through to all source-component flasher outputs. Identical brand and model source components cannot be operated individually using these commands. (For more information on controlling identical brand and model source components, refer to the Operation Overview on page 32.)

SYSTEM CONFIGURATIONS

CONFIGURATION 5 – INTEGRATING A HOME THEATER USING AN INTELLICONTROL

A Home Theater system controlled by a Niles IntelliControl can be integrated to share source components in a system with the ZR-4630.

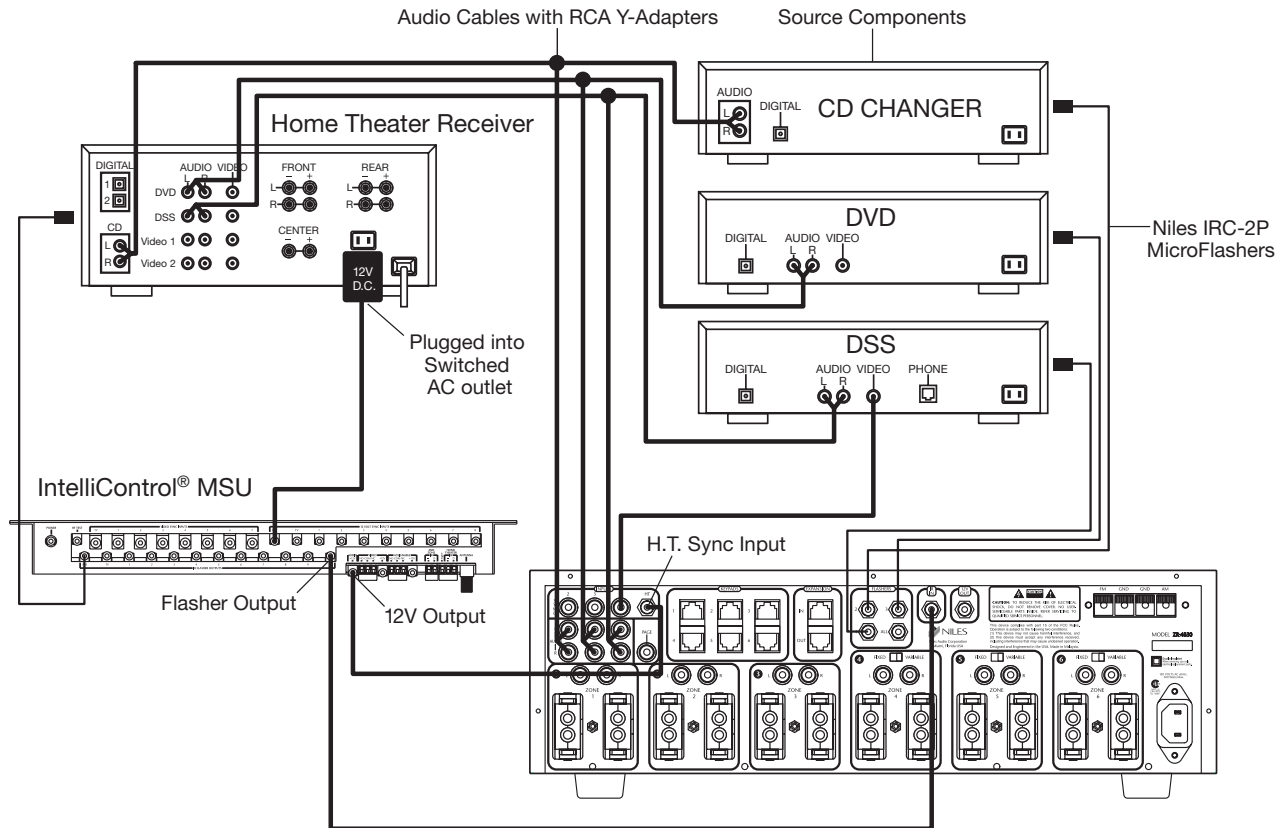


Figure 9

Audio Signals

Audio signals for the shared source components are connected to both the ZR-4630 and the Home Theater receiver using RCA Y-adapters (Figure 9).

Important Note: If the Home Theater receiver has shorting audio inputs, a Niles AVDA-3 Distribution Amplifier must be used in place of the RCA Y-adapters (for more information see configuration 3).

Shared Source-Component Control

The Flasher output from the IntelliControl® (Figure 9) is connected to the IR Input of the ZR-4630. The IntelliControl, programmed with Niles R-4 Remote IR commands, now can automate and control the shared source-components. Niles R-4 IR commands are taught to the IntelliControl using the R-4 Remote itself (see Programming Overview for more details).

A 12V Sync signal is provided from the IntelliControl to the Home Theater Sync Input to provide the ZR-4630 with the ON/OFF status of the Home Theater. This status enables the ZR-4630 to provide coordinated control of the source component's power ON/OFF.

Important Note: When issuing the source component's actual IR commands from the Home Theater Remote Control, all IR commands are passed through to all source-component flasher outputs. Identical brand and model source components cannot be operated individually using these commands. (For more information on controlling identical brand and model source components, refer to the Operation Overview on page 32.)

SYSTEM CONFIGURATIONS

CONFIGURATION 6 – MULTIPLE SOLO™ MASTER KEYPAD MODULES IN A ZONE

The single zone of a Niles ZR-4630 MultiZone Receiver can be expanded to contain multiple Solo™ Master Keypad Modules providing control from many locations within the zone. A Niles IntelliPad® Ci Expander™ is required to connect multiple keypads in a single zone. A maximum of five Solo™ Master Keypad Modules can be included in a single zone using two Expanders.

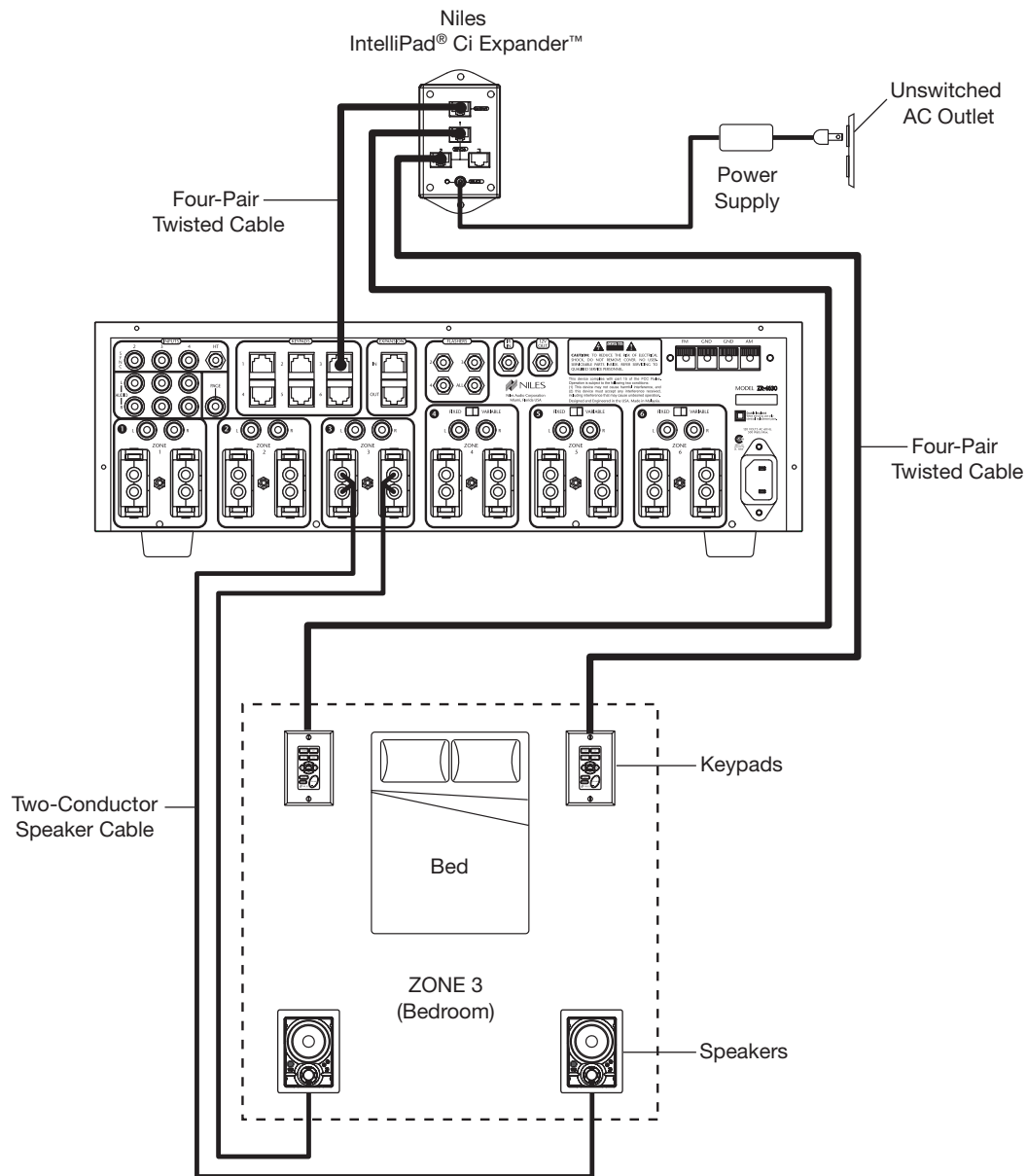


Figure 10

In Figure 10, two Solo™ Master Keypad Modules are installed on either side of a bed. When connected, all keypads in a zone work in tandem (i.e., all control the same zone and display the same Zone ON/OFF, Mute, and Input Select Status.)

SYSTEM CONFIGURATIONS

CONFIGURATION 7 – MULTIPLE LISTENING AREAS IN A ZONE

A single zone of the ZR-4630 can be set up to contain more than one listening area (i.e., an adjacent living room and dining room). This configuration is chosen when the speakers in the zone are not required to be played at separate volume levels or to be on/off separately.

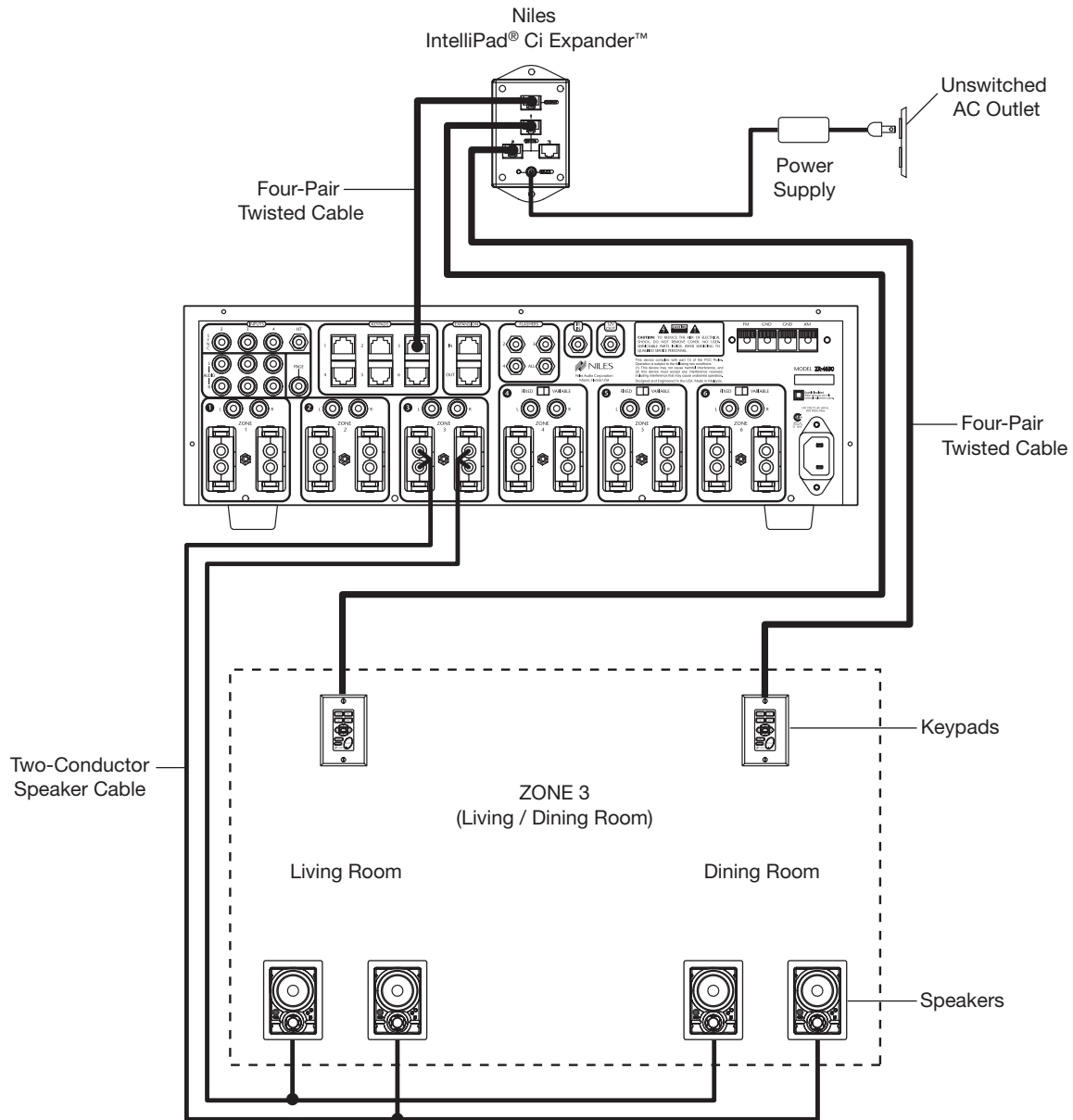


Figure 11

In Figure 11, speaker cable is connected to the speaker outputs of Zone 3 and then parallel connected to the speakers in both the living room and the dining room. A Solo™ Master Keypad Module is located in each area. A Niles IntelliPad® Ci Expander™ is required to connect the two Solo™ Master Keypad Modules in a single zone. When connected, all keypads in a zone work in tandem with one another (i.e., all control the same zone and display the same Zone ON/OFF, Mute, and Input Select Status).

A maximum of two pairs of 8 ohm speakers can be added to a zone in this manner. An external amplifier is required for zones with more than two pairs of speakers.

SYSTEM CONFIGURATIONS

CONFIGURATION 8 – EXTERNAL AMPLIFIER IN A ZONE FOR MORE POWER

Each zone of the ZR-4630 provides RCA preamplifier output connections for the connection of external amplifiers. External amplifiers can be used to provide more power in a zone.

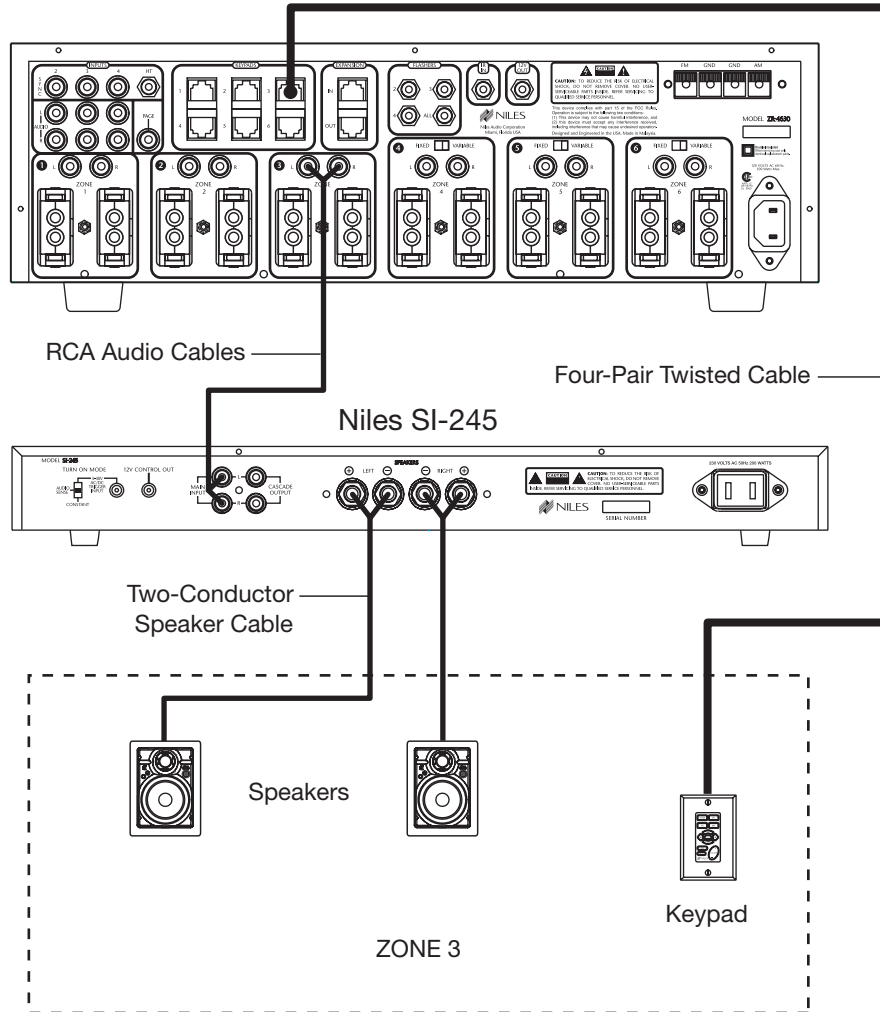


Figure 12

In Figure 12, an external amplifier has been connected to zone 3. Using an amplifier with more than the 30W per channel provides the zone with more volume for listening in large rooms and outdoors.

Important Note: When using preamplifier outputs for zones 4, 5, and 6, the fixed/variable switch must be in the variable position for this configuration.

SYSTEM CONFIGURATIONS

CONFIGURATION 9 – EXTERNAL AMPLIFIER IN A ZONE FOR MULTIPLE LISTENING AREAS

A zone of the ZR-4630 can be set-up to contain more than one listening area by adding an external amplifier (i.e., an adjacent living room and dining room area). This configuration is chosen when the speakers included in the zone are not required to be played at separate volume levels or to be ON/OFF separately.

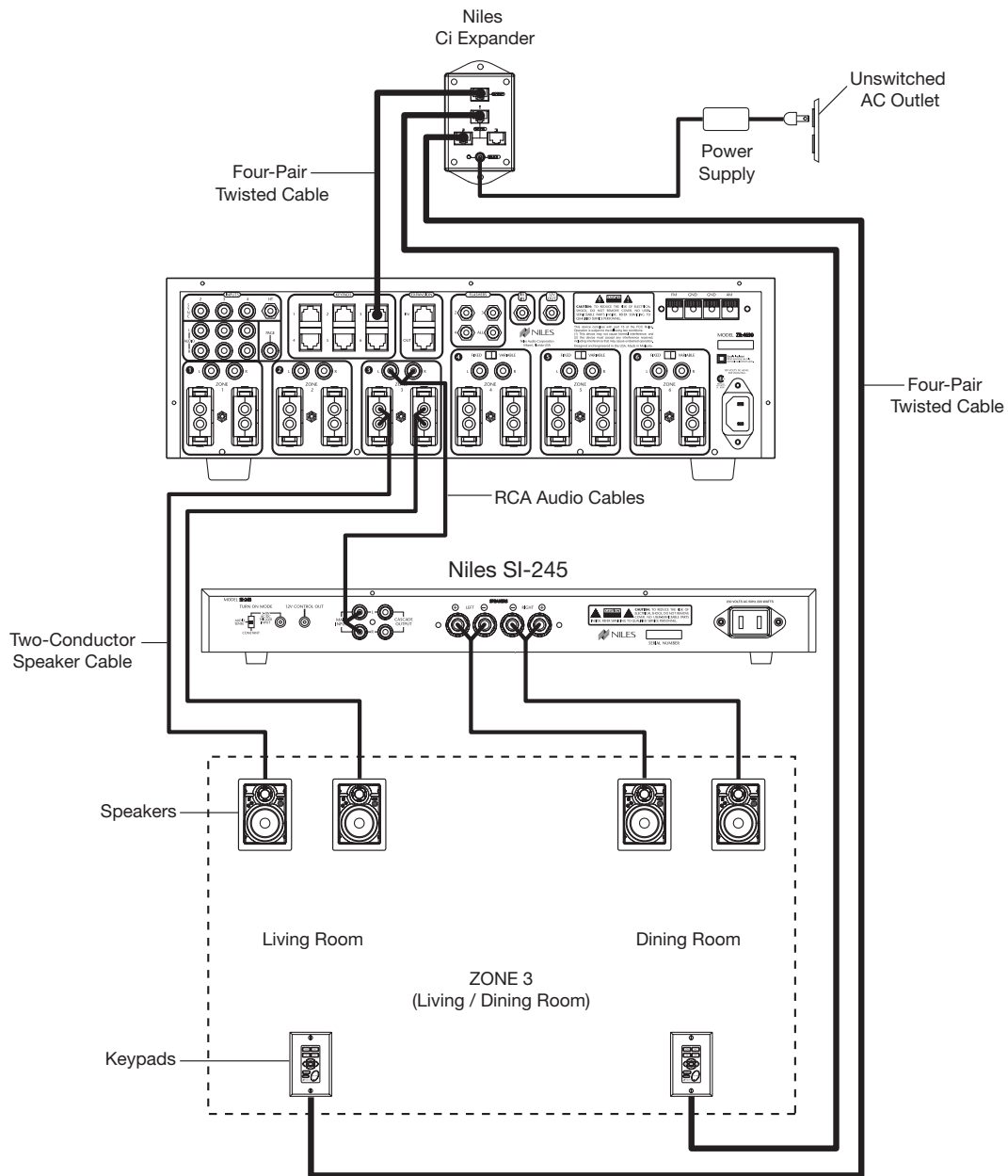


Figure 13

In Figure 13, an external amplifier has been connected to Zone 3. This enables the zone to have an additional listening area with its own dedicated amplifier. Now, with the ZR-4630's internal amplifier dedicated to one listening area and the external amplifier to the other, greater power is provided to the speakers in both areas.

Important Note: When using preamplifier outputs for zones 4, 5, and 6, the fixed/variable switch must be in the variable position for this configuration.

SYSTEM CONFIGURATIONS

CONFIGURATION 10 – EXTERNAL AMPLIFIER IN A ZONE FOR MULTIPLE ROOMS

The preamplifier output connectors on the ZR-4630 for zones 4, 5 and 6 have a fixed/variable setting. Using the fixed setting with an external amplifier enables a zone to be divided up into individual rooms using conventional Niles Impedance Matching Volume Controls.

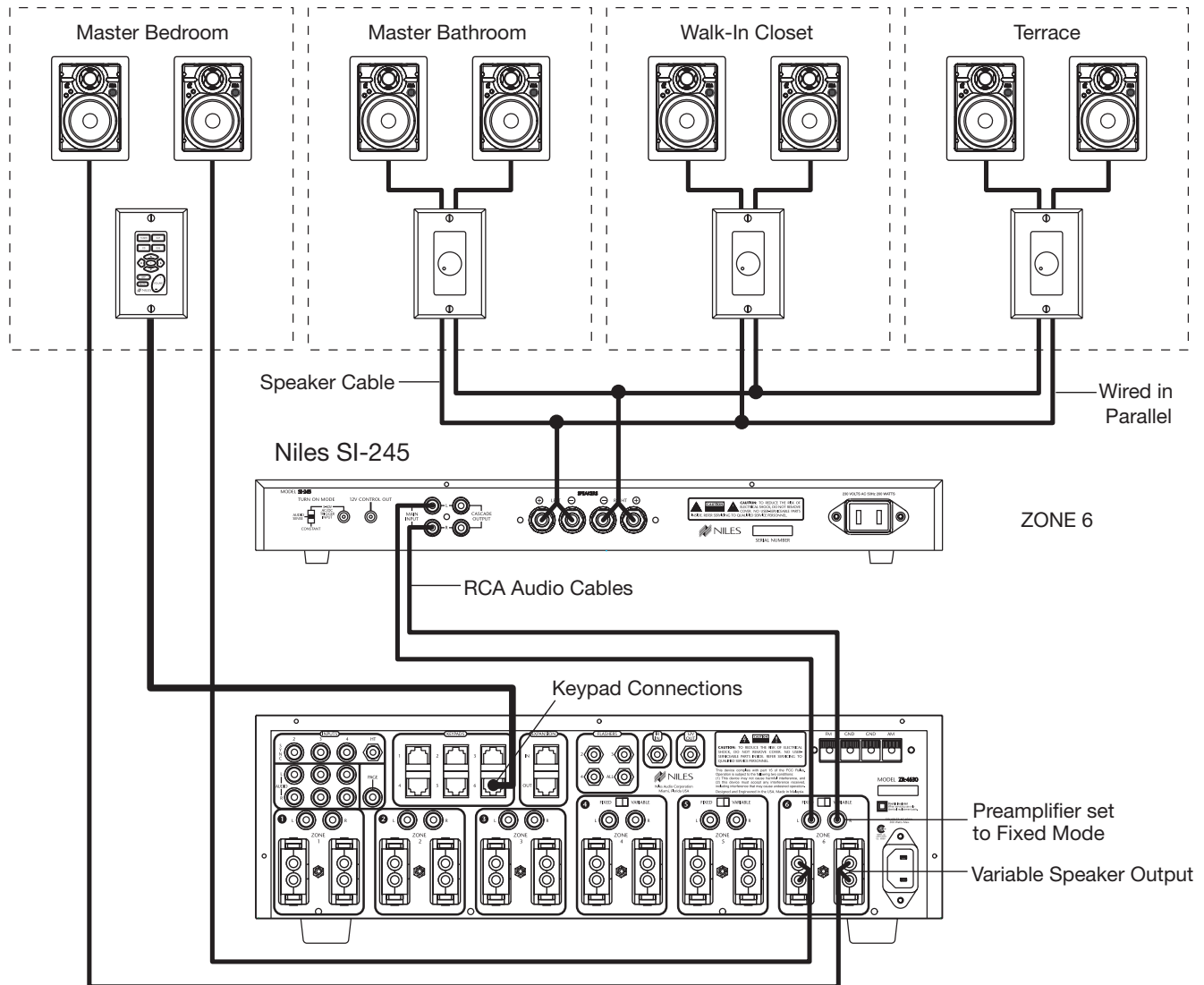


Figure 14

In Figure 14, Zone 6 has been expanded into four rooms. Each room can be On/Off individually and be set at different volume levels.

The speakers for the Master Bedroom are connected to the ZR-4630's internal zone amplifier. A Solo™ Master Keypad Module is placed in the master bedroom for control of ON/OFF, source selection, and source operation for the entire zone. However, the volume and mute buttons on the Solo™ Master Keypad Module affect the speakers in the master bedroom only.

Impedance-magnifying volume controls enable individual control of the speakers connected to the external zone amplifier in the master bathroom, the walk-in closet, and the terrace.

SYSTEM CONFIGURATIONS

CONFIGURATION 11 – SYSTEM PAGING AND EXTERNAL TELEPHONE SYSTEM

A Paging Input connection on the rear panel of the ZR-4630 provides a connection for the paging output signal of popular telephone systems for voice paging through the speakers in the listening zones (see Figure 15). Paging volume level can be adjusted by the ZR-4630 (see Installation Settings on page 59 for more information).

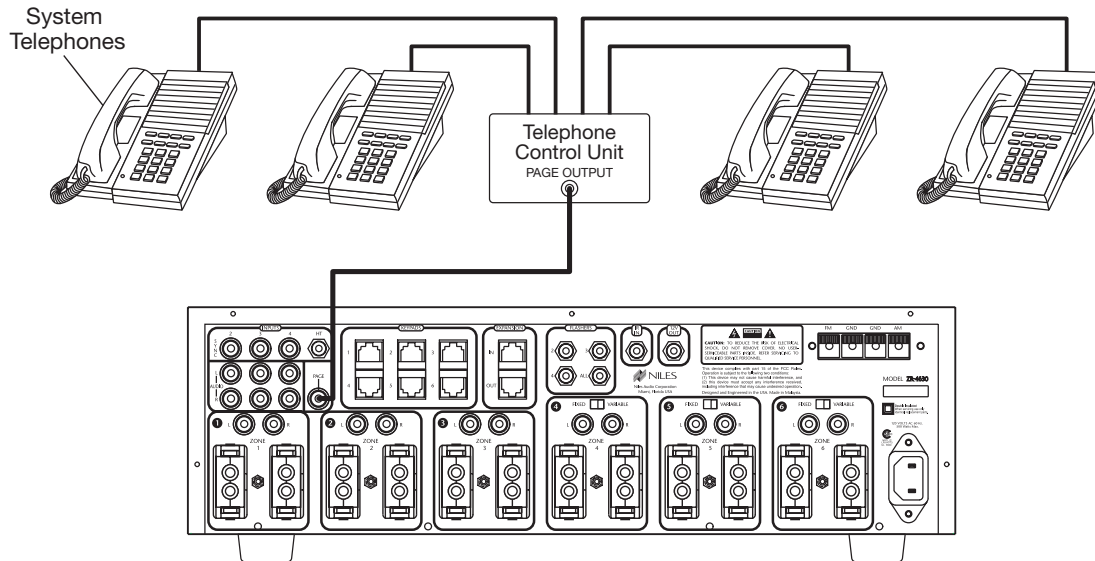


Figure 15

A Niles AVDA-3 (see Figure 16) is required when connecting a telephone system to more than one ZR-4630 in larger systems.

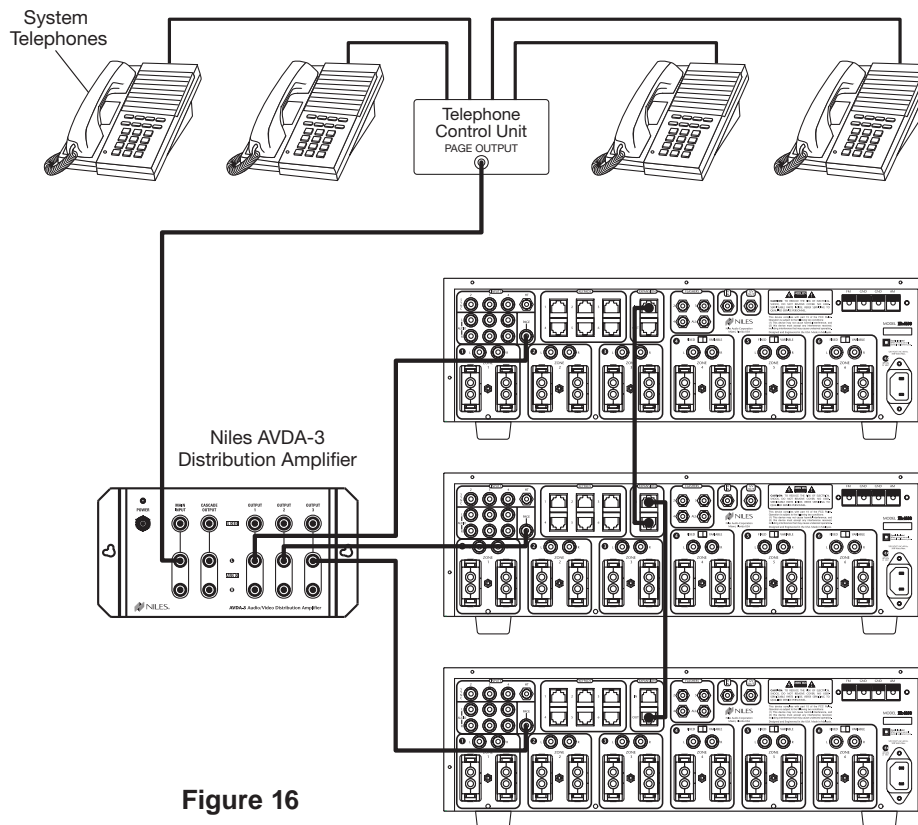


Figure 16

SYSTEM CONFIGURATIONS

CONFIGURATION 12 – IR REPEATING FOR CONTROL OF LOCAL COMPONENTS

An IR Repeating System can be integrated into a room connected to the Niles ZR-4630 (see Figure 17). This enables a single IR Sensor (installed in that room) to control local components with a hand-held IR remote control.

In Figure 17, a Niles IR Sensor is connected to a Niles IRP-6+ for control of local components and to a Niles ZR-4630 for control of distributed components. A Niles SPK-1 Automated Speaker Level A-B Switcher switches the front speakers in the Master Bedroom from the ZR-4630 distributed sound system to the local surround-sound receiver system when the local system is activated.

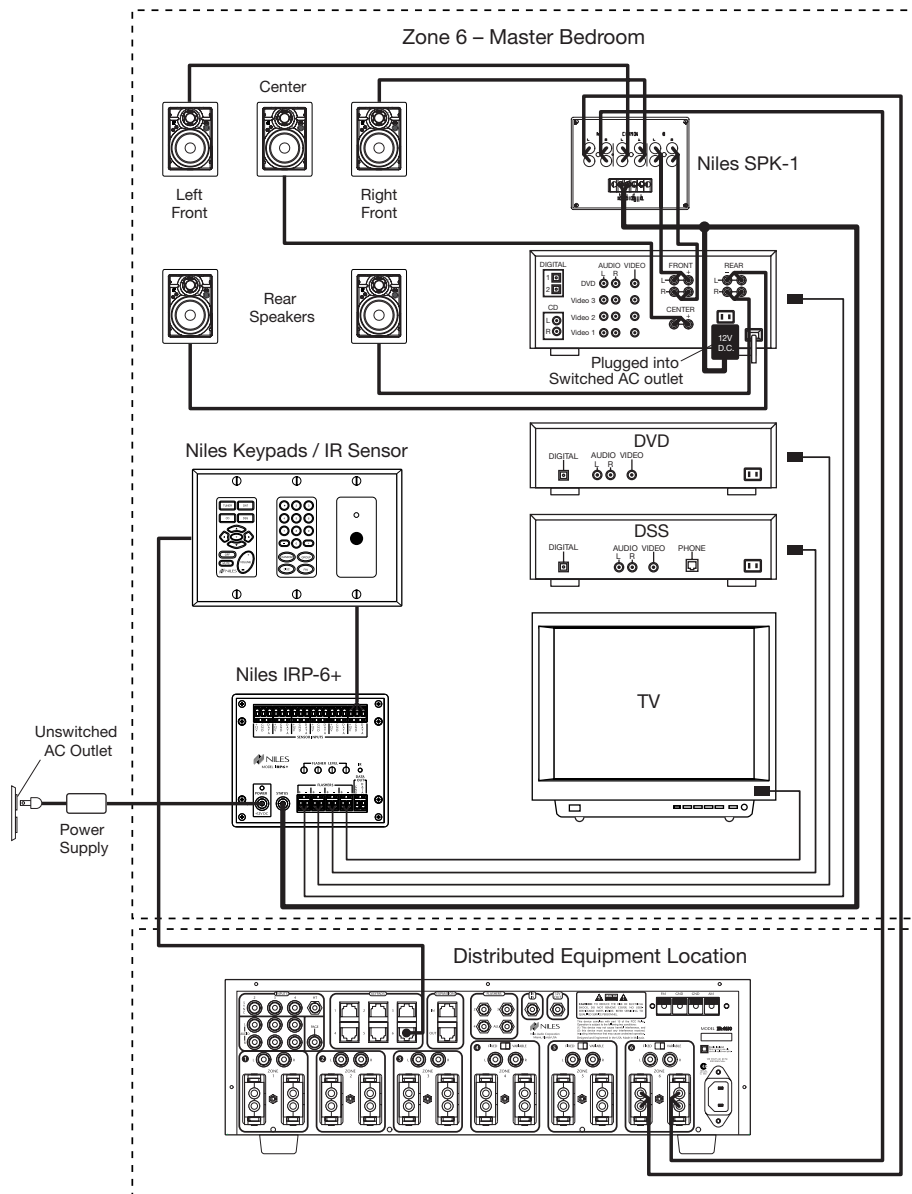


Figure 17

Important Note: Use of an identical brand and type component in both the local and the distributed system (i.e., a Sony CD player in both systems) is not supported by this configuration. Individual operation of identical components may not be possible. IR blockers included with Niles IRC-2 MicroSensors™ may be required to prevent IR feedback when using this configuration.

COMPONENT COMPATIBILITY

Infrared Command Compatibility

IR control testing was conducted on many equipment brands to determine their compatibility with the ZR-4630. Typical A/V source components (i.e., CD, DVD, DSS, Cable Boxes, etc.) from each brand were chosen for the test. All brands listed below passed the test.

Adcom	Kenwood	Motorola	Samsung
APEX	Krell	NAD Electronics	Scientific Atlanta
B&K	Lexicon	Nakamichi	Sharp
Denon	Lightolier	Niles	Sherwood
Echo Star	Linn	Onkyo	Sony
Escient	LiteTouch	Panasonic	Teac
Go Video	Magnavox	Parasound	Technics
Harman Kardon	Marantz	Philips	Toshiba
Hitachi	McIntosh	Pioneer	Yamaha
Hughes	Meridian	RCA	Zenith
JVC	Mitsubishi	Rotel	

Important Note: Use this list only as a starting point. All the components for every brand listed were not available at the time of testing. To avoid unforeseen incompatibilities, Niles recommends always testing components you have not yet used with a ZR-4630 prior to specifying them in your installation.

Testing for a Possible IR Command Conflict

When using a Niles IRC-1P FloodFlasher™, there are rare instances when the same IR command will operate more than one source component. This prevents the proper operation of another IR-controlled component when the two are installed in the same system because the press of a single remote button causes both components to respond. Rare as this situation is, when working with unfamiliar equipment or two products that you have never combined in the same system, it is advisable to first test how these components interact with each other.

To test for this type of conflict, take all the remotes in the system (following the example above with six components, you would need to test all six remotes) and issue every command you will be programming in the keypads. Expose all components to each command, and make sure that only the appropriate component responds.

Solving the IR Command Conflict if Present

Remember that conflicts of this nature are rare. However, if you find yourself in this situation, contact the manufacturer to ask if they are aware of the problem and if they have a solution. Perhaps they now have a different remote, or there may be a chip upgrade for the product.

If the manufacturers do not have a solution, the problem may be resolved by using a Niles IRC-2P MicroFlasher™ instead of IRC-1P FloodFlasher™. In cases where neither solution works, advise the client of the situation and explain that it is necessary to substitute the component.

SOURCE POWER SYNCHRONIZATION

WHAT IS SOURCE-POWER SYNCHRONIZATION?

The ZR-4630 has been designed to keep track of the ON/OFF condition of the three source components connected to the system. This enables source components that utilize the same IR command for ON and OFF to be automated.

For this feature to function as designed, you need “synchronization (sync)” between the ZR-4630 and source components that utilize the same IR command for ON and OFF. This assures the users of the system that the ZR-4630 will always issue Power commands correctly when they press a Master Key or the Off Key.

Source Power Sync makes it possible for the user to always have a source component turn ON when they need it on and to always have all the components turn OFF when they turn the System off.

Source Components that require Power Synchronization

Source components that utilize the same IR command for ON and OFF need to be synchronized. The power button for these source components sends the same IR command to turn the source components ON if they are OFF, and to turn them OFF if they are ON. It is necessary to “synchronize” these source components with the ZR-4630 so it knows not to send an ON command if the source components are already ON (if it did, the source components would turn OFF, which is not the desired result). Conversely, synchronization keeps the ZR-4630 from issuing a “power” command when the OFF Key is pressed, if the source components are already OFF.

The ZR-4630 has three Sync Inputs for each of the source components. It allows synchronization via voltage and video signals. (see Choosing a Synchronization Method on page 29 for more information on how to synchronize components).

Source Components that do not require Synchronization

Two types of components do not require synchronization: those with separate ON and OFF IR commands, and those with “latching power.”

Source Components with separate ON/OFF IR commands

There are source components that are included with and respond to separate ON and OFF IR commands. Synchronization is not required for them. When power commands are programmed as separate ON and OFF, the ZR-4630 will issue ON commands only if Sync is not present. Separate OFF commands for source components are always issued when the last zone turns OFF regardless of sync status.

Source Components with “Latching Power”

Some source components, like CD players and tape decks, are usually plugged into the switched AC outlet of the preamplifier/receiver that they are installed with. These components simply turn ON when the system’s receiver/preamplifier turns ON, meaning that they “latch” into an ON or OFF state and do not need an IR command to turn ON or OFF.

Because they turn ON as soon as there is power on their AC cord, once the preamplifier/receiver is turned on, these components will be turned on as well. They do not need individual synchronization.

Since the ZR-4630 does not provide a switched AC outlet, the 12V Control Output connected to a Voltage Triggered AC Power Strip (i.e., Niles AC-3) provides perfect control of latching source components (see Configuration 1 in the Systems Configurations section of this manual for more information).

SOURCE POWER SYNCHRONIZATION

CHOOSING A SYNCHRONIZATION METHOD

Once you establish that all source components in the system have compatible IR commands, the next step is to choose the appropriate Sync Method for each component.

There are two ways to detect when a component is ON or OFF: Video or Voltage Sync.

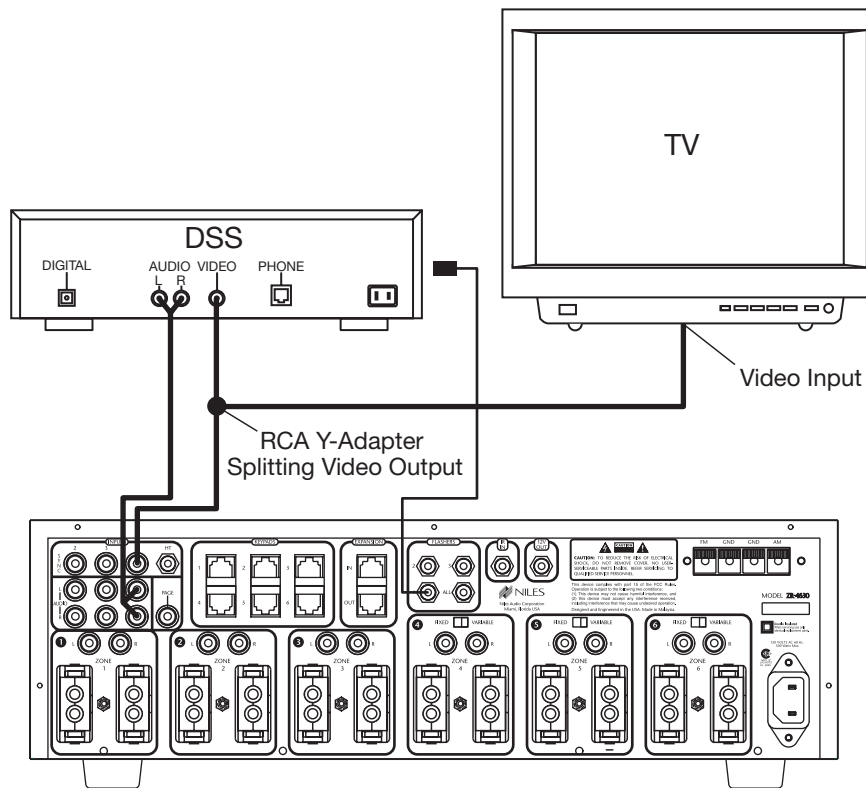


Figure 18

Video Sync

Video Sync is the easiest and most reliable method of synchronization. Most video sources have a video output active only when the device is ON. This type of video output provides an excellent method for component synchronization.

The ZR-4630 has three source-synchronization connections that can accept either 12V or video input. In Figure 18, the video output of a DSS is connected to both a TV and the corresponding Sync Input for the DSS using an RCA Y-adapter. Picture quality will be unaffected due to the high impedance of the Sync Input.

If the source component has two video outputs, the need for an RCA Y-adapter is eliminated. Simply connect the first video output to its normal system destination, and the second video output will be dedicated for the Sync Input.

SOURCE POWER SYNCHRONIZATION

Voltage Sync

Voltage Sync is also a reliable method of synchronization if chosen and implemented correctly. The Sync Inputs can detect the control out voltage from a Niles Signal Sensing product interfaced to the source component.

Obtaining Voltage Sync

Current Sensing

Current Sensing synchronizes a component by detecting the changes in the AC power draw that occurs with a component when it turns ON and OFF.

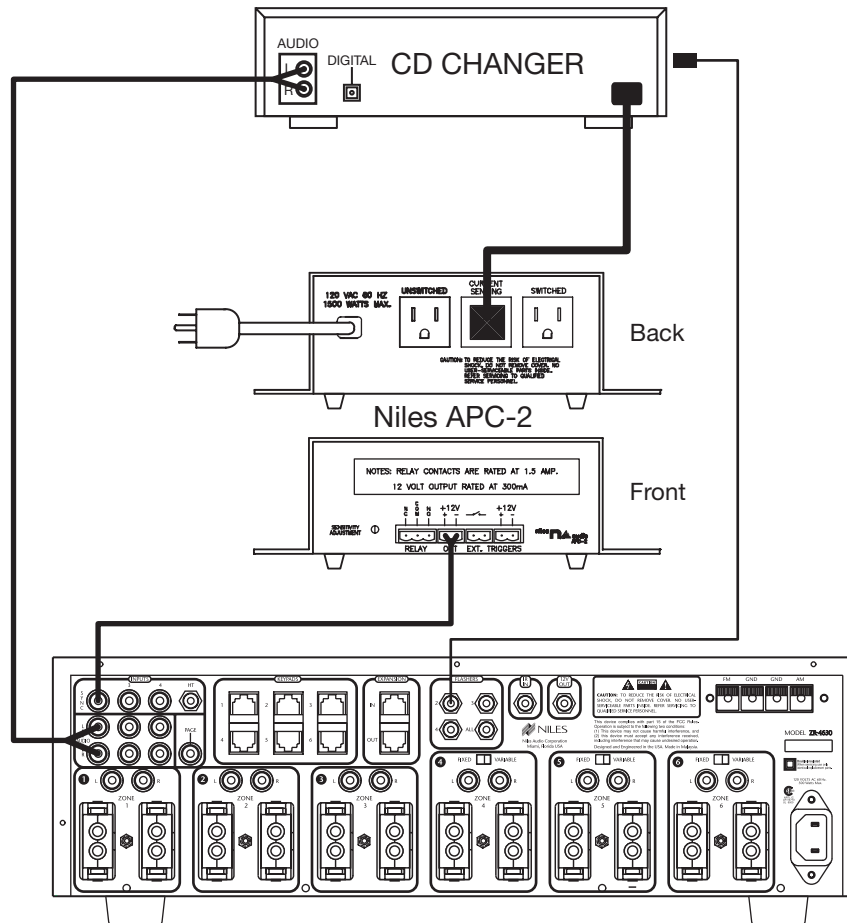


Figure 19

In Figure 19, a Niles APC-2 Current Sensing Switch senses the change in power consumption of a CD changer when it is turned ON. When it senses that change, it outputs a 12V DC signal. The synchronized CD changer's AC power plug is connected to the current sensing outlet on the APC-2. The APC-2's 12V DC output is connected to the ZR-4630's Sync Input dedicated to the CD changer using a Niles 10' accessory cable with bare wire to mini-plug (FG00724, see Accessories for more details).

When using a Niles APC-2, a minimum change of 30W is required for reliable current sensing. If the component does not have a 30W change in current draw when turning ON (i.e., DSS receivers and most VCRs and CD players), consider the last method, Light Sensing.

SOURCE POWER SYNCHRONIZATION

Light Sensing

Using a light sensor (LS-1) to synchronize your components is usually your last choice, simply because the other choices are more reliable. The Niles LS-1 Light Sensor can synchronize a component by sensing changes in light. The 12V output of the LS-1 is then connected to the ZR-4630's Sync Input dedicated for that component, a mini-plug to RCA adapter is required for this connection (see Connections for more information).

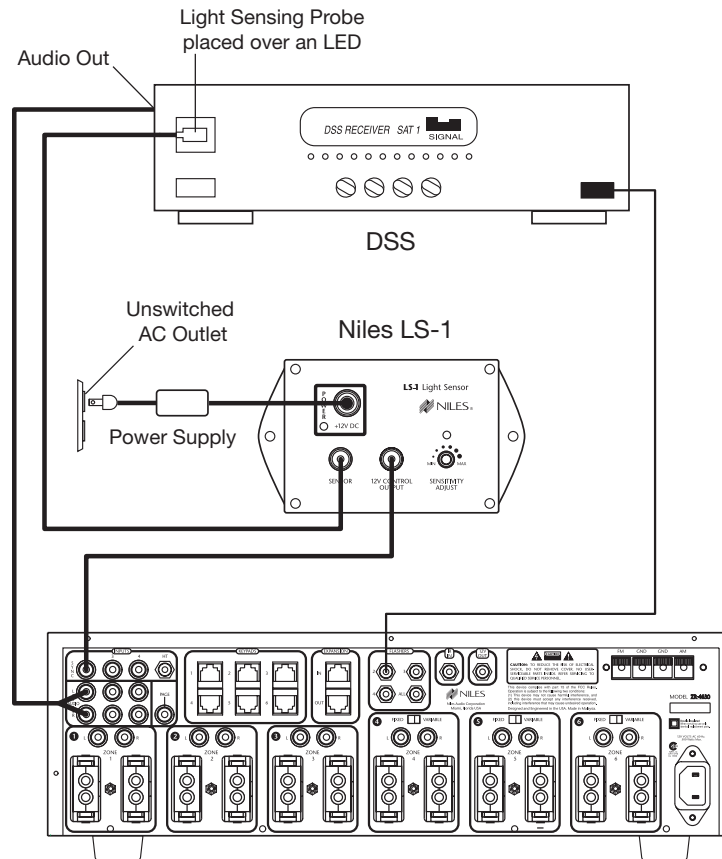


Figure 20

In Figure 20, a Niles LS-1 Light Sensor senses changes in brightness of a DSS's front panel LED and outputs a 12V DC signal when the LED is brightest. A blocking cover is used to prevent ambient light from falsely triggering the LS-1.

An unused optical digital output located on the rear panel of a digital source component can also provide a light source for Sync using the LS-1.

SOURCE AND HOME THEATER SYNC STATUS

Sync status (the presence or absence of a valid sync signal) of source components and the Home Theater associated with the Master ZR-4630 are displayed on the LEDs located in the hidden programming panel. These LEDs illuminate only while a valid sync signal is being received by the ZR-4630 during normal operation mode. Source 2, Source 3, and Source 4 LEDs represent Source 2, Source 3, and Source 4 respectively. The Tuner LED represents the Home Theater. These status LEDs are used during system troubleshooting. Manually turning ON/OFF synchronized source components and the integrated Home Theater will turn ON/OFF the respective component's status LED if synchronized correctly.

OPERATIONAL OVERVIEW

MASTER KEYS/SOURCE BUTTONS

The Master Keys available on the Solo™ Master Keypad Module and the Source Buttons on the hand-held R-4 Remote (Figure 21) provide “one-touch activation” of the ZR-4630 and source components.

The Master Keys on the Solo™ Master Keypad Module are equipped with back lighting LEDs for indicating Zone ON/OFF, Zone Mute, and Zone Input Selection status.

The Source Buttons on the R-4 Remote correspond to the Master Keys on the Solo™ Master Keypad Module (Master Key 1 = Tuner, Master Key 2 = Source Button 2, Master Key 3 = Source Button 3, and Master Key 4 = Source Button 4).

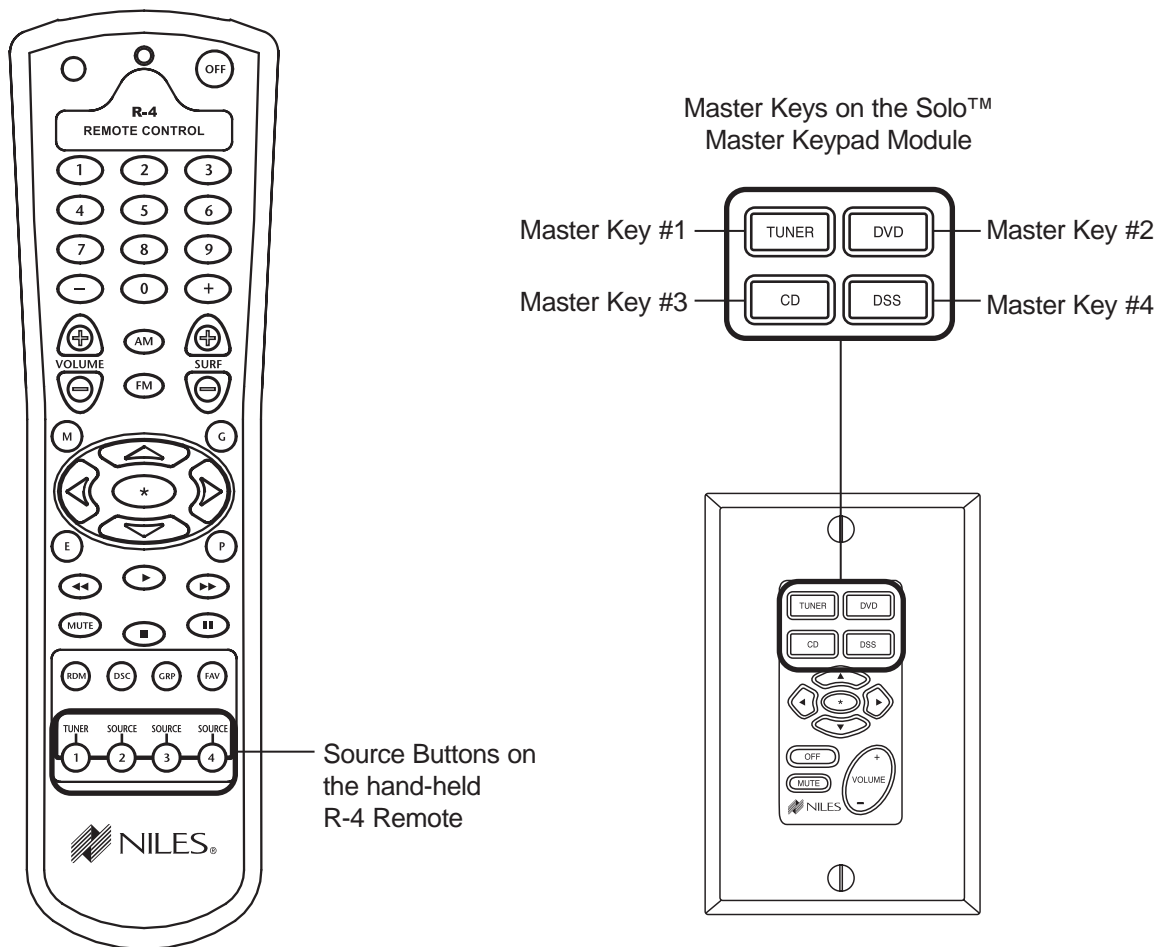


Figure 21

The four available Master Keys and their corresponding Source Buttons are individually programmable. Once programmed, they operate the system identically in each zone. Master Keys on the Solo™ Master Keypad Module should be labeled the same in each zone.

OPERATIONAL OVERVIEW

Master Key/Source Button Events

When you press a Master Key on a Solo™ Master Keypad Module or a Source Button on the hand held R-4 Remote, as many as four events occur.

The first event is factory programmed and activates the zone which you are located. The second event is factory programmed and selects the proper source input corresponding to the Master Key or Source Button pressed (1 = Tuner, 2 = Input 2, 3 = Input 3, 4 = Input 4).

There are two installer programmable events available for Master Keys and Source Buttons 2, 3, and 4: Event 3 - the Source ON Event, and Event 4 - the Sequence Event.

Because there is no power command required for the ZR-4630's internal tuner, Master Key 1 and the Tuner Source Button are programmable only with the Sequence Event.

Master Key/ Source Button	Event 1 (Zone ON)	Event 2 (Input)	Event 3 (Source ON)	Event 4 (Sequence)
Master Key 1 or Tuner Source Button	Turns Zone On (Factory Programmed)	Selects Tuner (Factory Programmed)	Not Available	Installer Programmed
Master Key 2 or Source Button 2	Turns Zone On (Factory Programmed)	Selects Input 2 (Factory Programmed)	Installer Programmed	Installer Programmed
Master Key 3 or Source Button 3	Turns Zone On (Factory Programmed)	Selects Input 3 (Factory Programmed)	Installer Programmed	Installer Programmed
Master Key 4 or Source Button 4	Turns Zone On (Factory Programmed)	Selects Input 4 (Factory Programmed)	Installer Programmed	Installer Programmed

Event 1

This event turns a ZONE ON when a Master Key or a Source Button is pressed. Pressing and holding a Master Key/Source Button turns all zones on to that source (the zone must be enabled via a DIP switch, see Installation Settings for more details). When a zone is on, the selected Master Key on the Solo™ illuminates green.

Event 2

This event selects the proper input for the Master Key/Source Button pressed. The source selected for Master Key 1 on the Solo™ Master Keypad Module, and the Tuner Source Button on the R-4 Remote, is the internal Tuner. Master Keys/ Source Buttons 2, 3, and 4 are for the external audio inputs respectively. These inputs are selected every time a Master Key or a Source Button is pressed or pressed and held.

Event 3

This event turns ON IR-activated source components (i.e., DSS, VCR) when a Master Key/Source Button is pressed. The Source ON event occurs only for Master Keys/Source Buttons 2, 3, and 4. **Power commands for each Master Key/Source Button are programmed individually and occur conditionally, synchronized via the corresponding Sync Inputs.**

Event 4

This event issues IR commands and programmed time delays. **It is executed last and occurs every time a Master Key/Source Button is pressed.** Play, group, file, or channel commands for an associated source component typically are included in the sequence. The sequence for Master Keys/Source Buttons 2, 3, and 4 can be programmed with the IR commands taught to their respective function keys along with programmed time delays. The sequence for the Tuner Source Key can be programmed with the tuner's direct access or preset access commands.

OPERATIONAL OVERVIEW

MASTER KEY/SOURCE BUTTON OPERATION

The Master Key/Source Buttons have two methods for operating the system.

Single-Zone Operation

The first method, a quick tap of a Master Key/Source Button in a zone (holding the Key/Button for less than three seconds), causes only that zone to turn ON. The Master Key quickly tapped illuminates GREEN after the zone turns ON. A zone turns ON to its last volume setting. A maximum turn ON volume can be programmed into the ZR-4630 (see Installation Settings for more information).

System-Wide Operation

The second method, a press and hold of a Master Key/Source Button in any zone (holding the Key/Button for more than three seconds), turns all zones ON that are set to ALL ON/Page enabled (this setting is made via front panel programming DIP switches, set individually for each zone). All zones enabled for ALL ON/PAGE, select the source associated with the Master Key/Source Button pressed and held, and that same Master Key LED illuminates GREEN. The ALL ON volume can be adjusted with the ZR-4630 (see Installation Settings for more information).

Note: When the Tuner Master Key (master #1) is pressed and held, the radio station currently selected in that zone will be selected by all zones when using multiple ZR-4630's in a system.

OFF KEY/OFF BUTTON

The OFF Key/Button included on both the Solo™ Master Keypad Module and the hand-held R-4 Remote provide “one-touch” system deactivation. When you are finished listening in a zone, a single press of the OFF Key/Button deactivates the zone.

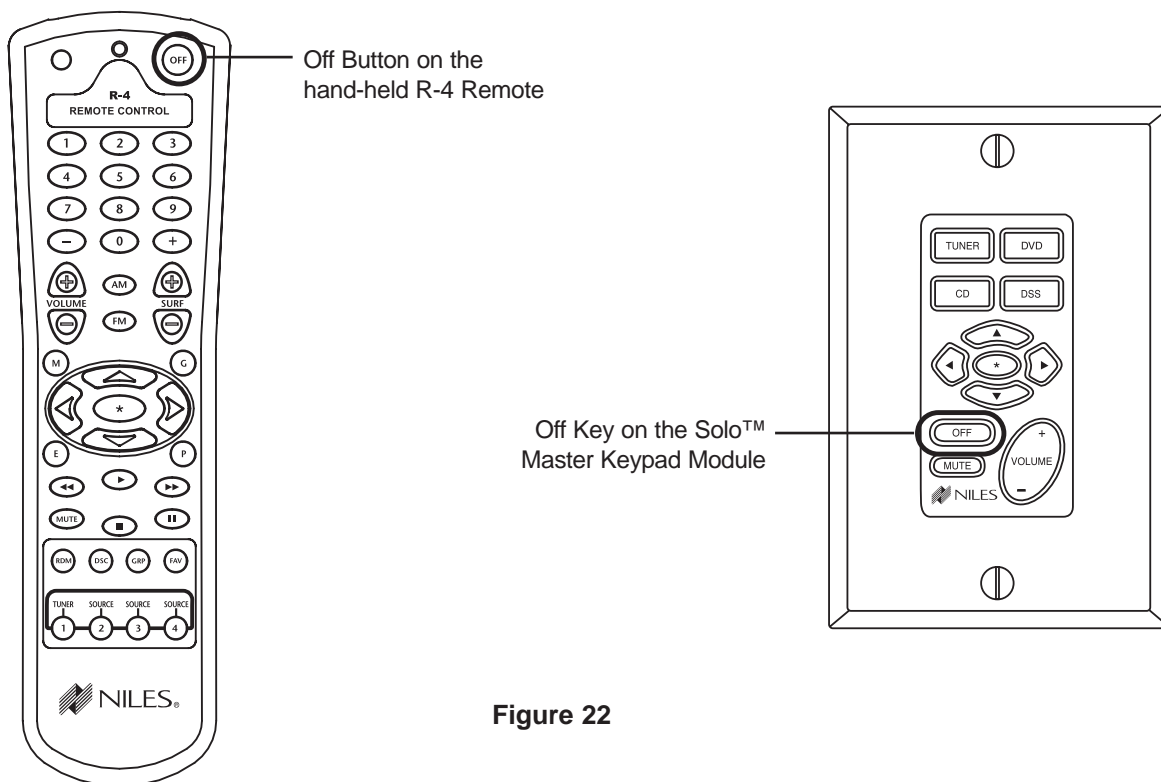


Figure 22

OPERATIONAL OVERVIEW

OFF Key Events

When you press the OFF Key/Button, as many as two events occur. The first event is factory programmed and is responsible for turning the zone or all zones OFF every time the OFF Key/Button is pressed.

The second event is responsible for turning OFF the source components and only occurs if the zone turning OFF was the last zone ON in the system (including the Home Theater Zone sharing source components). There is no programming required for this event. The programming that was accomplished for the Master Key Source ON events is reversed to deactivate the source components.

Master Key/ Source Button	Event 1 (Zone OFF)	Event 2 (Source OFF)
OFF Key	Factory Programmed	Programmed Automatically

The Zone OFF Event is factory programmed and the Source OFF Event is automatically programmed to reverse the programming of the Master Key/Source Buttons that turn the source components ON. **IR commands are issued conditionally based on System and Component power synchronization and the on/off status of other zones in the system and the Home Theater.**

OFF KEY/BUTTON OPERATION

The OFF Key/Button has two methods of operation.

Single Zone OFF

The first method, a quick tap of the OFF Key/Button in a zone that is currently ON (holding the OFF Key/Button for less than three seconds), causes the zone to turn OFF. The Master Key LED that was illuminated turns OFF.

System Wide OFF

The second method, a press and hold of the OFF Key/Button, turns all zones OFF (holding the OFF Key/Button for more than three seconds). All Master Key LEDs in all zones turn OFF.

OPERATIONAL OVERVIEW

VOLUME KEYS/VOLUME BUTTONS

The Volume Keys on the Solo™ Master Keypad Module and the Volume Buttons on the hand-held R-4 Remote provide control of volume for individual zones.

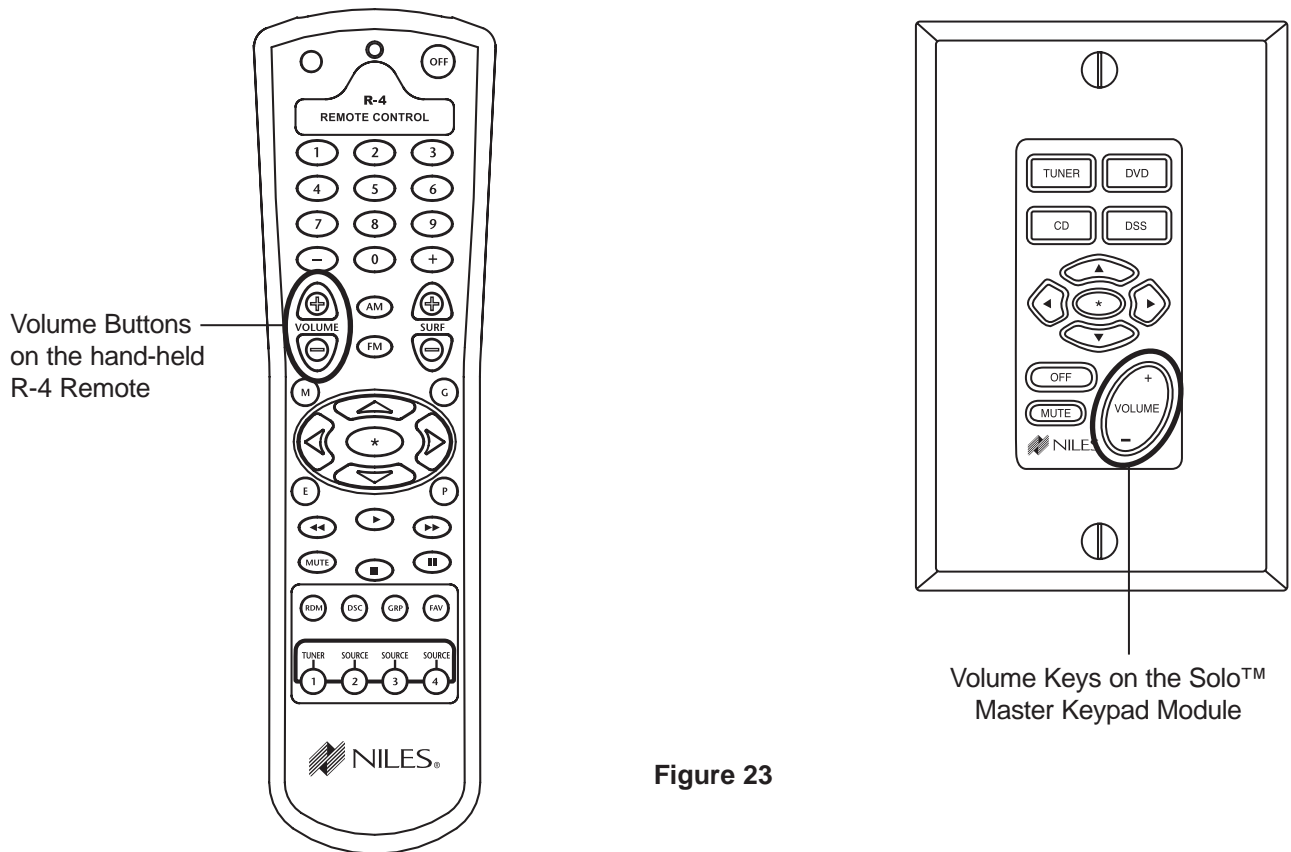


Figure 23

Volume Keys/Volume Buttons Operation

Pressing the Volume + or the Volume - Keys/Buttons raises and lowers the speaker output and the preamplifier output for the zone in which you are located. (Zones that have their preamplifier outputs set to the fixed mode are not affected by the volume keys/buttons, see Installation Settings.)

OPERATIONAL OVERVIEW

MUTE KEY/MUTE BUTTON

The Mute Key/Button provides a method of turning the sound ON/OFF for a brief moment in an individual zone without turning the zone OFF (this also prevents the source component from being turned OFF).

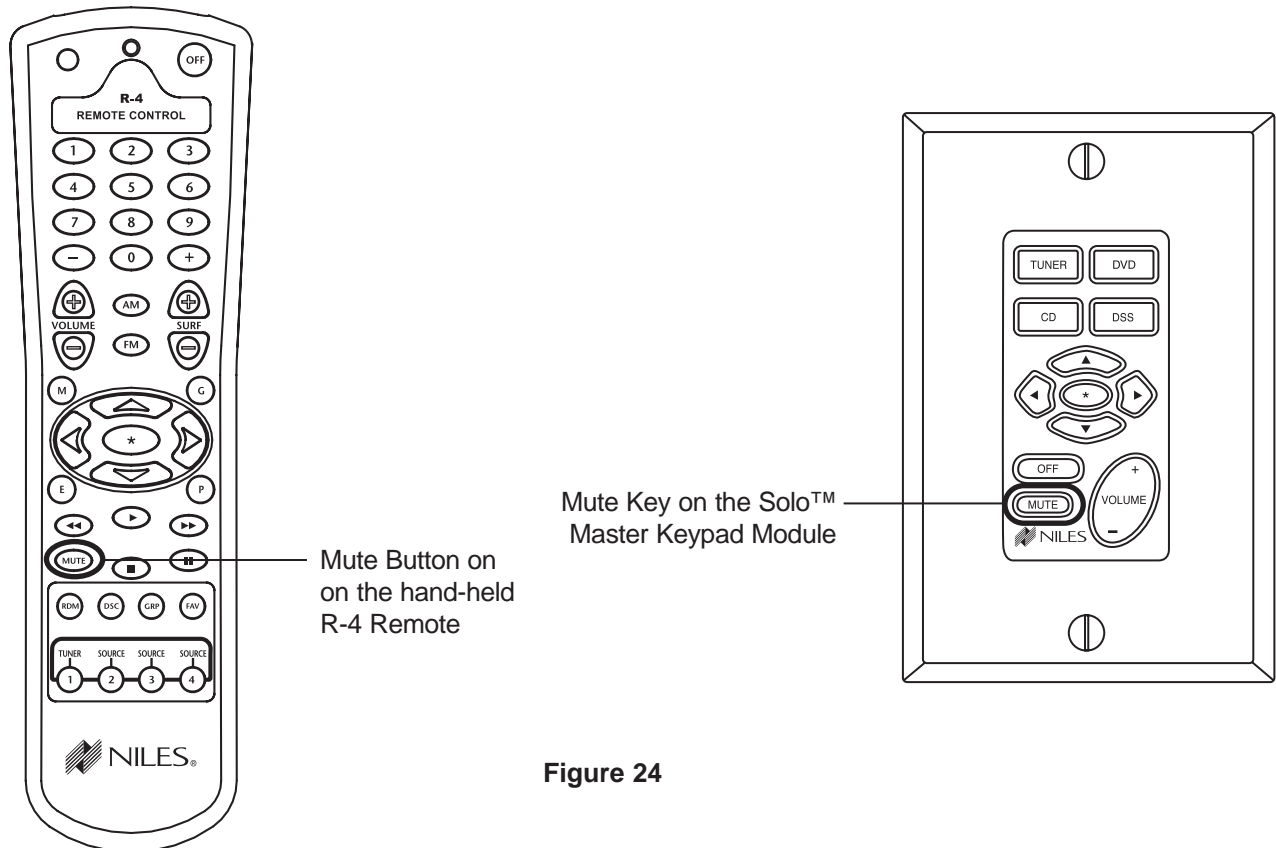


Figure 24

Mute Key/Mute Button Operation

In a zone using the speaker output or the preamplifier output set to variable, pressing the Mute Key/Button mutes and unmutes the sound for that zone only. The ZR-4630 still considers the zone to be ON while the zone is MUTED. The Master Key for the selected source lights GREEN while the zone is ON and unmuted, and RED while the zone ON and MUTED. If a zone has more than one Master Keypad Module installed using an Expander, all Master Keypads in that zone indicate identical system status (i.e., Zone ON/OFF, Zone Mute and Zone Input Selection status), and operate the zone in tandem with one another.

Important Note: A preamplifier output for a zone that is set to fixed output is unaffected by the mute command and always outputs sound while the zone is on (zones 4, 5, and 6 can be set to fixed mode).

OPERATIONAL OVERVIEW

FUNCTION KEYS/BUTTONS

The Solo™ Master Keypad Module, the Numeric™ Accessory Keypad Module, and the hand-held R-4 Remote include various function keys for control of the built-in tuner and the connected source components. Figure 26 illustrates the available function keys for all of the control devices.

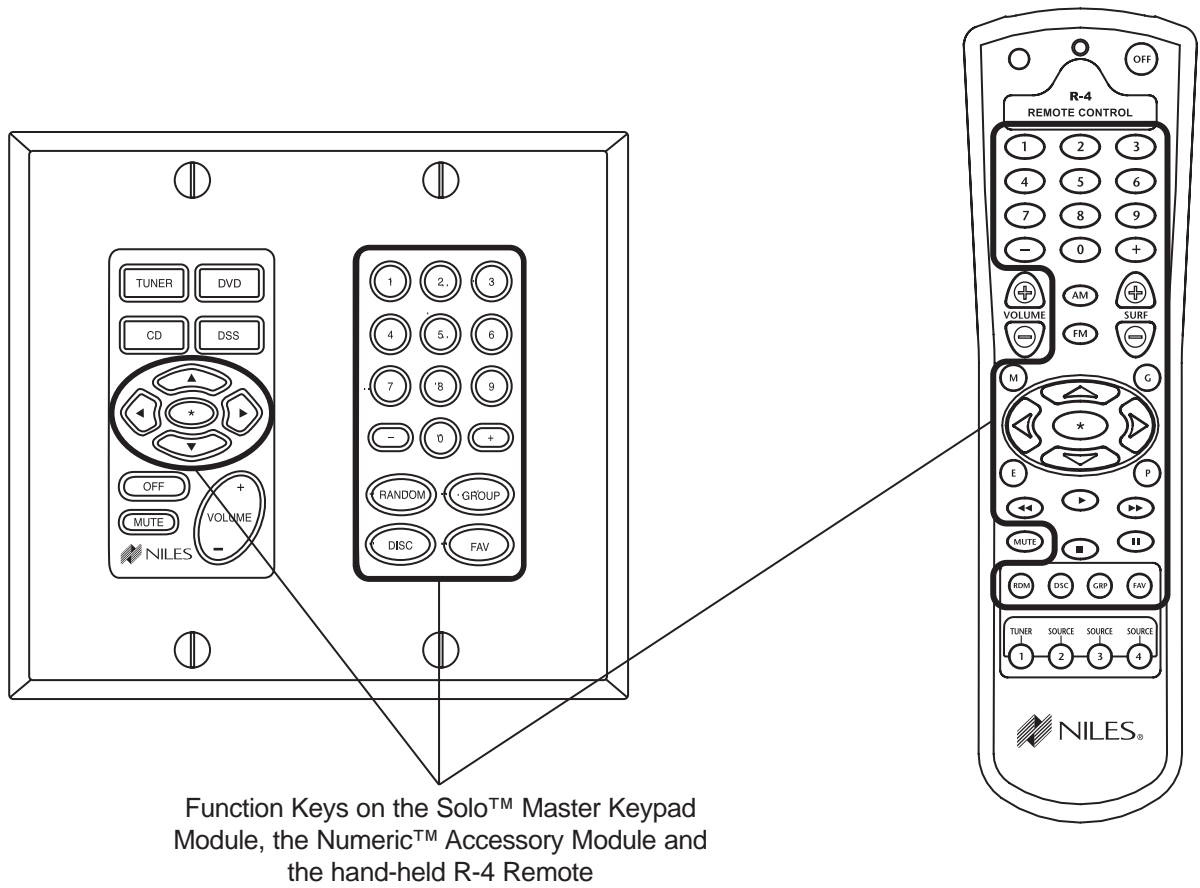


Figure 25

Function Key/Button Operation for Connected Source Components

After the Master Key/Source Button for a source component has been pressed, the ZR-4630 activates a zone and selects that source component. The individual function keys/buttons in that zone will now issue the IR commands that have been programmed for the source component you selected.

OPERATIONAL OVERVIEW

Function Key/Button Operation for the Built-in Tuner

The commands for operation of the built-in tuner from the function keys/Buttons are pre-programmed. Figure 27 depicts the available commands for the tuner, their function key/button location, and a description of their action on the tuner.

Pre-Programmed Tuner Commands	
Key	Command
*	AM/FM
Arrow Up	Next Preset
Arrow Down	Last Preset
Arrow Right	Seek Up
Arrow Left	Seek Down
Surf +	Next Preset
Surf -	Last Preset
AM	AM
FM	FM
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
0	0
-	Last Preset
+	Next Preset
Fav	Preset Call

Figure 26

Shifts tuning band between AM and FM

Scrolls the 20 preset stations, 10 AM and 10 FM

Next tunable station is selected in the currently chosen tuning band, AM or FM

Scrolls the 20 preset stations, 10 AM and 10 FM

Direct access to AM and FM

Number commands for accessing stations directly or by preset number

Scrolls the 20 preset stations, 10 AM and 10 FM

Enables number commands to call preset stations

After the Tuner Master Key/Source button has been selected in a zone, the pre-programmed tuner commands become available from their designated function keys/buttons. Radio stations can be accessed from preset memory, or directly.

OPERATIONAL OVERVIEW

FRONT PANEL TUNER OPERATION

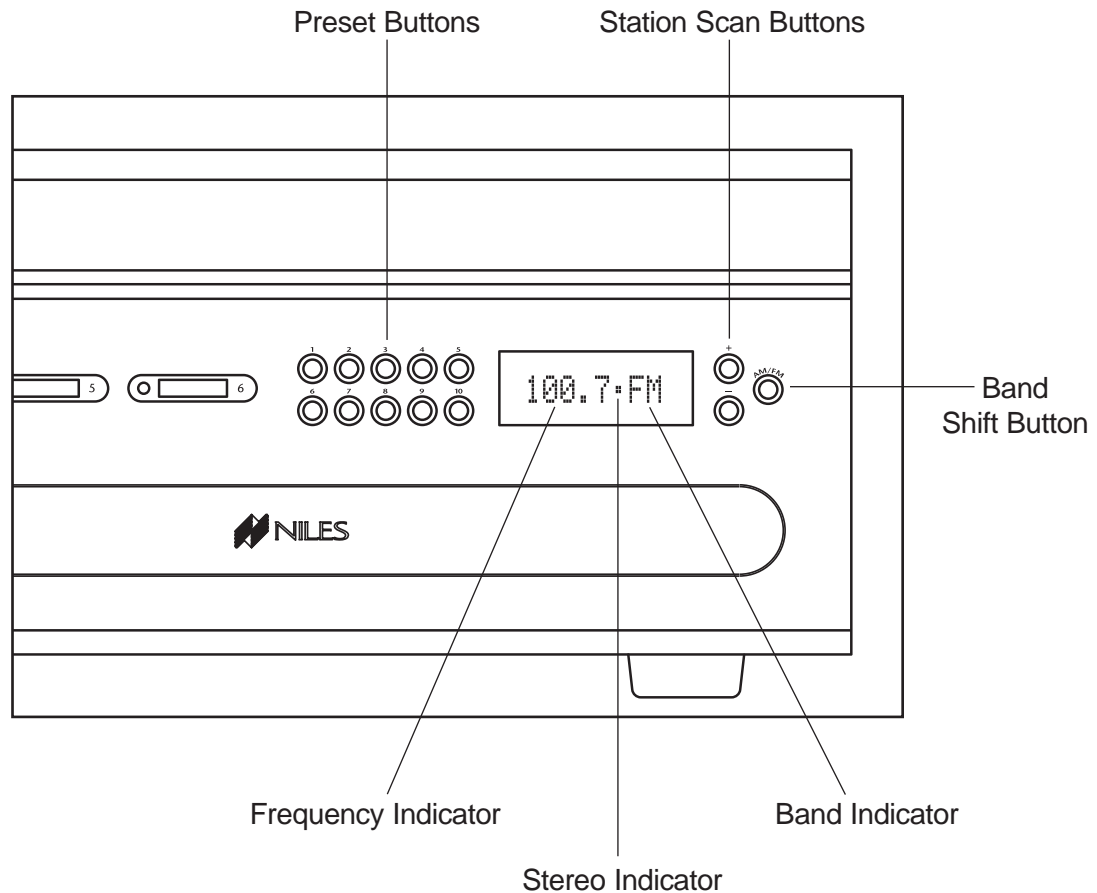


Figure 27

Band-Shift Button

The Band Shift Button toggles the selected tuning band between AM and FM.

Station Scan Buttons

A quick tap of the Station Scan Buttons increments the tuner one frequency step. Pressing and holding the Station Scan Buttons searches the currently selected band for the next tunable station (+ searches upward in frequency, – searches downward in frequency).

Preset Buttons

The Preset Buttons have two functions. The first is to call up memorized preset stations with a quick tap (supports 10 presets for the AM band and for 10 for the FM band). The second is to store preset stations in the memory. Refer to Tuner Preset Programming Steps for more details.

Indicators

The Frequency Indicator displays the currently selected station. The Stereo Indicator appears when a stereo radio station is received. The Band Indicator displays the currently selected tuning band (AM or FM).

OPERATIONAL OVERVIEW

IDENTICAL SOURCE COMPONENTS

The ZR-4630 routes the individual source component IR commands with which it has been programmed to specific Flasher Outputs. This provides individual control of identical source components (i.e., two DSS receivers of the same brand and model). These programmed IR commands are routed to the individual Flasher Outputs based on the source components for which they were programmed. The table below designates where IR commands are routed when a zone is selected to one of the three source components.

Selected Source	FLASHER OUTPUTS			
	Flasher ALL	Flasher 2	Flasher 3	Flasher 4
Source 2	X	X		
Source 3	X		X	
Source 4	X			X

Important Note: Operation of an identical source component is not possible using its actual IR commands in a zone installed with an IR Sensor. (i.e., using the source component's original remote control or a learning remote control programmed with these IR commands). Identical source components can be operated from a zone with an IR Sensor using Niles hand-held R-4 Remote IR commands (see Programming Overview for more information).

SHARED SOURCE COMPONENTS

Source components (i.e., DVD player, CD changer, DSS receiver) used with a ZR-4630, can be "Shared" with multiple ZR-4630's and/or a Home Theater system (refer to System Configurations 2, 3, 4, and 5 for more details). The ZR-4630 has been designed to provide coordinated control of these "shared" source components from all zones, of all ZR-4630's and the Home Theater.

A Source Component in a ZR-4630 Multi-Zone System is considered "shared" when its audio signal is connected to more than one ZR-4630 or if it is connected to a ZR-4630 and a Home Theater system (refer to System Configuration 2 and System Configuration 3 for more details).

OPERATING A SYSTEM WITH MULTIPLE ZR-4630'S

Operating a system with multiple ZR-4630's is the same as operating a system with only one ZR-4630. Solo™ Master Keypad Modules in each zone independently operate the zone to which they are dedicated to (i.e., zone ON/OFF, Volume Up/Down, Mute). When a user in a zone from any ZR-4630, presses a key/button, the IR commands required for the shared source components (i.e., Power ON/OFF, Play, Stop, and Channel Up), are issued by the ZR-4630 that has been programmed. See the Programming Section of this manual for specific details on programming.

Important Note: The built-in AM/FM tuners in each of the ZR-4630's, are not "sharable" between each other or with the Home Theater. The six zones provided by each of the ZR-4630's listen to and control their own built-in AM/FM tuner (refer to the Programming section of this manual for more details on tuner programming).

OPERATIONAL OVERVIEW

OPERATING A SYSTEM INTEGRATED WITH A HOME THEATER

Operation from the Stereo Zones Provided by the ZR-4630

User operation from the zones provided by ZR-4630's, are not affected when integrating a Home Theater to share source components (see System Configurations 4 & 5). Solo™ Master Keypad Modules in each zone independently operate the zone to which they are dedicated (i.e., Zone ON/OFF, Volume Up/Down, Mute). When a user in a zone from any ZR-4630, presses a Key/Button, the IR commands required for the shared source components (i.e., power ON/OFF, Play, Stop, and Channel Up), are issued by the ZR-4630 that has been programmed. See the Programming Section of this manual for specific details on programming.

Operation from the Home Theater Zone

A Home Theater can be integrated to share source components with a ZR-4630 using one of three methods. How the Home Theater will operate depends on which method is chosen. The three methods of integration are listed below, along with a description of the Home Theater operation they provide.

Method 1. Integrated Home Theater using 12V Home Theater Sync and IR Repeating

The Home Theater IR Remote (programmed with the actual IR commands of the shared source components) sends IR commands to the shared source components via the IR Input located on the rear panel of the ZR-4630. This enables control of the shared source components for users in the Home Theater. All IR commands for shared source components are passed through to all four of the Flasher Outputs on the rear panel of the ZR-4630. Only discrete power ON and transport commands for the shared source components should be issued.

Important Note: Because all of the actual IR commands for shared components are passed through to all the Flashers Outputs simultaneously, identical source components cannot be operated individually with this method. Also, when using this method, reliable activation of Shared Source Components that use a single IR command for power ON/OFF is not possible. (Refer to Method 2 for operating identical shared source components and Components with a single IR command for power ON/OFF.)

When the Home Theater turns ON, it provides a 12V Status signal that is connected to the Home Theater Sync Input on the rear panel of the ZR-4630. This provides the ON/OFF status of the Home Theater to the ZR-4630.

The moment a valid Home Theater Sync signal is present at the ZR-4630, the ZR-4630's 12V Control Output sends a turn-on trigger for a Voltage-Triggered AC Power Strip (i.e., Niles AC-3), activating latching source components.

When the Home Theater is turned OFF, the ZR-4630 checks itself and any other ZR-4630's in the system to see if any zones are still ON. If all zones are OFF, the 12V Control Output shuts OFF, turning OFF the latching source components. Power OFF IR commands for turning OFF the IR controlled shared source components are also issued.

Method 2. Integrated Home Theater using 12V Home Theater Sync and Niles R-4 Commands

The Home Theater IR Remote (programmed with the Niles R-4 IR commands) sends IR commands to the ZR-4630 via the IR Input located on the rear panel. This enables control of the shared source components for users in the Home Theater.

All the actual IR commands for shared source components are programmed into the ZR-4630. When a Niles IR command is received, the corresponding programmed-source IR commands are sent to the Flasher Output dedicated to the shared source component that is selected (i.e., Source 2 = Flasher 2, Source 3 = Flasher 3, Source 4 = Flasher 4). Identical source components can be individually operated with this method.

Important Note: shared source components that are unique in the system can have their actual IR commands programmed into the Home Theater remote and issued for simple IR repeating with this method.

OPERATIONAL OVERVIEW

When the Home Theater turns ON, it provides a 12V Status signal that is connected to the Home Theater Sync Input on the rear panel of the ZR-4630. This 12V Status signal provides the ON/OFF status of the Home Theater to the ZR-4630.

The moment a valid Home Theater Sync signal is present at the ZR-4630, the ZR-4630's 12V Control Output sends a turn-on trigger for a Voltage-Triggered AC Power Strip (i.e., Niles AC-3), activating latching source components.

When the Home Theater is turned OFF, the ZR-4630 checks itself and any other ZR-4630's in the system to see if any zones are still ON. If all zones are OFF the 12V Control Output shuts OFF, turning OFF the latching source components. Power OFF IR commands for turning OFF the IR controlled shared source components are also issued.

Method 3. Integrated Home Theater without 12V Home Theater Sync and using Niles R-4 Commands

The Home Theater IR Remote (programmed with the Niles R-4 IR commands) sends IR commands to the ZR-4630 via the IR Input located on the rear panel. This enables control of the shared source components for users in the Home Theater.

All the actual IR commands for shared source components are programmed into the ZR-4630. When a Niles IR command is received, the corresponding programmed source IR commands are sent to the Flasher Output dedicated to the shared source component that is selected (i.e., Source 2 = Flasher 2, Source 3 = Flasher 3, Source 4 = Flasher 4). Identical source components can be individually operated with this method.

Important Note: shared source components that are unique in the system may have their actual IR commands programmed into the Home Theater remote and issued for simple IR repeating using this method.

When the Home Theater is turned OFF, the Home Theater Remote sends a Niles OFF command to the ZR-4630. The ZR-4630 then checks all zones, for all ZR-4630's in the system. If all zones are OFF, the 12V Control Output shuts OFF, turning OFF the latching source components. Power OFF IR commands for the IR controlled shared source components, programmed into the ZR-4630 are also issued conditionally, based on the Source Sync status of the shared source components.

SYSTEM BUSY INDICATION

The ZR-4630 has a built-in System Busy Indication mode that is displayed on the Master Key LEDs of the Solo™ Master Keypad Module. If the ZR-4630 receives simultaneous commands from two different users and each user is located in a separate zone, the user who does not get the expected response will be alerted by the Master Key. That Master Key LED will quickly blink RED three times. The user who received the RED flashing Master Key simply issues their command again.

Important Note: IR commands and delays included in the sequence for Master Keys also cause the system to indicate busy while they are being executed.

PAGING INDICATION

The ZR-4630 has a built-in Paging Indication mode that is displayed on a Master Key LED of the Solo™ Master Keypad Module. If the ZR-4630 sends a page to a zone, the user is alerted by the Master Key. That Master Key LED will blink slowly GREEN. The Master Key LED resumes its last state (ON or OFF) when the page is completed.

Important Note: Paging takes priority over all system functions until the page has ended.

INSTALLATION

PLACEMENT

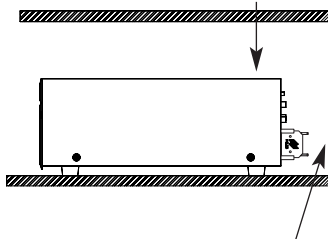
Place the ZR-4630 on a flat, level surface such as a table or shelf, with its weight equally distributed on each of its four feet. Placing the weight of the amplifier on the rear or front panel for even an instant will result in damage to the amplifier's connectors and controls.

Like any high-fidelity component, the ZR-4630 will last much longer if it is given adequate ventilation for proper cooling. When installing the ZR-4630 in a cabinet, be sure that the cabinet's rear is open to receive fresh air in order to provide proper cooling (see Figure 28). If the cabinet's design does not accommodate an open rear, install two small "boxer fans" to provide continuous airflow into and out of the cabinet (see Figure 29). Place the ZR-4630 so it has at least seven inches of free air space above it. If the amplifier is located on a carpeted surface, place a board under the amplifier's feet. Do not block the ventilation holes on the top and bottom of the ZR-4630.



Figure 28

Make sure that there is a minimum of 7" of free air space above the amplifier and 3" on each side for proper ventilation.



Allow a minimum of 2" of depth behind unit to accommodate cables and connectors.

CAUTION! When using low-impedance speaker loads (less than 8 ohms Nominal) refer to Figure 29 for proper placement.

Boxer Fan (55 CFM) directly centered 7" on top of the ZR-4630.

Boxer Fan (55 CFM) directly centered 2" behind the ZR-4630.

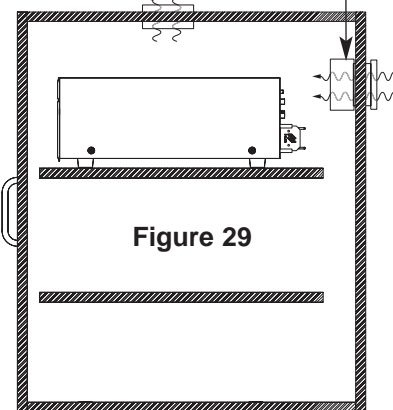


Figure 29

If the cabinet rear is not open to fresh air or if you're using low-impedance loads, install two "boxer fans" to provide continuous air flow into and out of the cabinet.

CONNECTIONS

CONNECTING SPEAKER WIRE TO THE NILES NO-STRIP CONNECTOR

The ZR-4630 utilizes a patented no-strip speaker-wire connector. Follow the steps below to connect the speaker wires to the connector and the connector to the ZR-4630.

1. Separate the speaker wire so that at least two inches of each conductor is free.
2. Open the no-strip connector by applying pressure to the red and black levers until you hear an audible "click".
3. Insert the negative (–) unstripped wire fully into the speaker-wire hole next to the BLACK lever and the positive (+) unstripped wire into the speaker-wire hole next to the RED lever. Squeeze the RED and BLACK levers until you hear an audible "click", indicating that the connector has locked onto the wire. (See Figure 30-A).
4. Insert the no-strip connector into the corresponding zoned speaker-output socket on the rear panel of the ZR-4630. Push it down until it locks in place. The connector only fits the socket in one position. If the terminal does not insert completely, reverse the connector 180 degrees and re-insert. (See Figure 30-B).

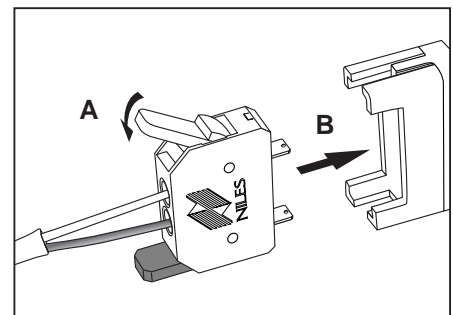


Figure 30

CONNECTIONS

TERMINATING FOUR-PAIR TWISTED CABLE

The Solo™ Master Keypad Modules, the Expander, and the ZR-4630's System Expansion connections require a four-pair twisted cable with a one-to-one wiring configuration. To maintain consistency throughout all Intellipad Ci installations, we recommend the color-coding pattern described in Figure 31. However, you may follow the color-coding pattern of your choice, as long as it is used consistently throughout the system.

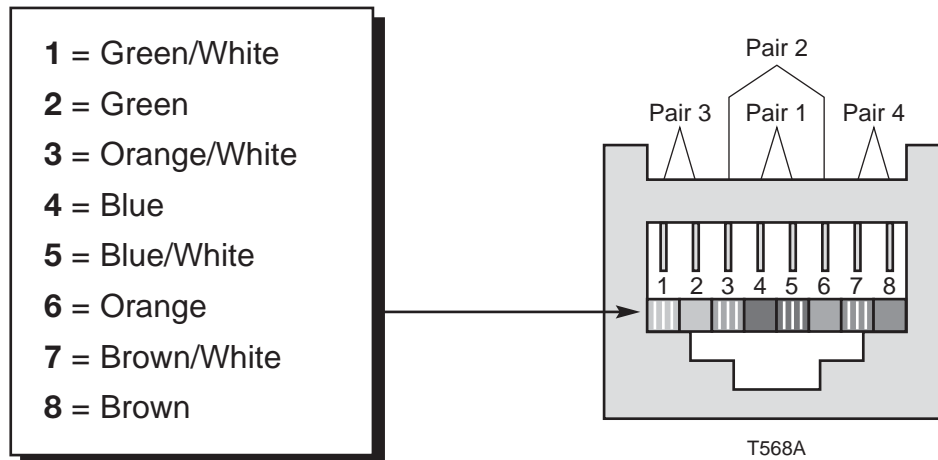


Figure 31

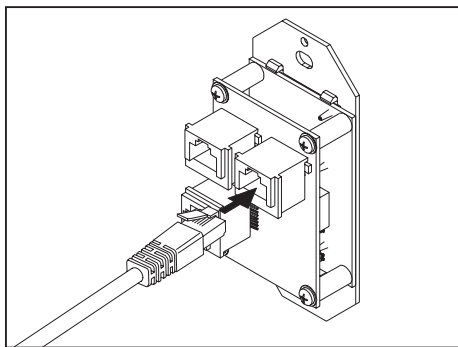


Figure 32

CONNECTING THE SOLO™ MASTER KEYPADS TO THE HOME RUN OF FOUR-PAIR TWISTED CABLE

The home run of four-pair twisted cable is terminated with a male RJ-45 connector and plugged into the rear panel jack labeled SYSTEM on the Solo™ Master Keypad Module (see Figure 32).

CONNECTING NUMERIC™ KEYPADS

Each Solo™ Master Keypad Module can be mated with one optional Numeric™ Accessory Keypad Module using an included jumper cable (see Figure 33).

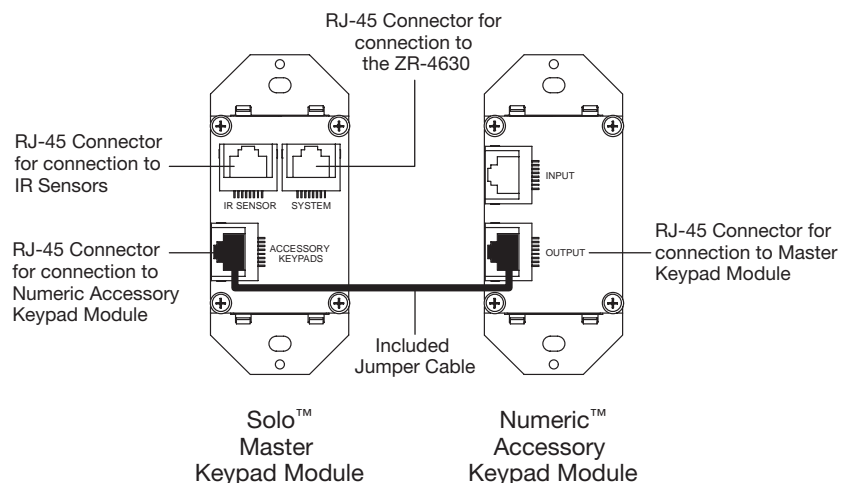


Figure 33

CONNECTIONS

CONNECTING IR SENSORS

An IR sensor can be connected to a Solo™ Master Keypad Module in one of two ways, directly with a four-pair twisted cable (see Figures 34 and 35), or with a three-wire to RJ-45 adapter available from Niles for IR Sensors installed with two-conductor shielded cable (see Figure 36 and the Accessories Section of this manual).

Connecting a Sensor using Four-Pair Twisted Cable

As shown in Figure 34, one end of the four-pair twisted cable connects with bare wire to the IR Sensor. The other end is terminated with a Male RJ-45 connector and plugs into the Solo™ Master Keypad Module.

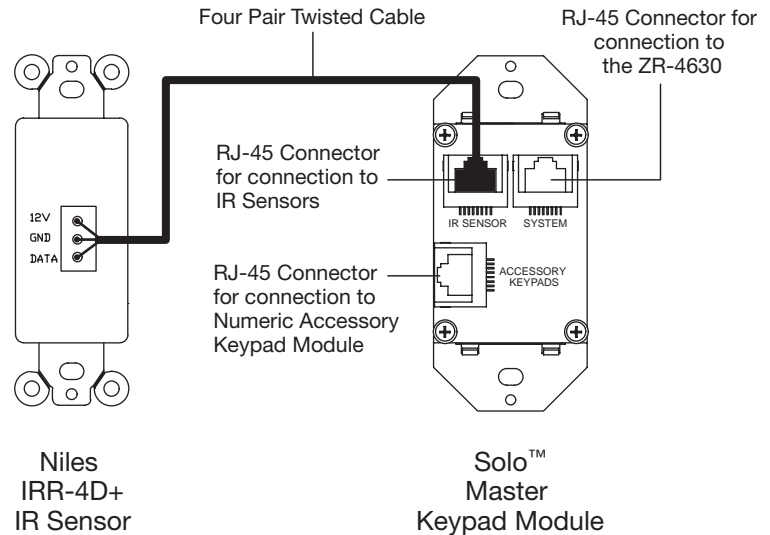


Figure 34

Figure 34 depicts the correct wires to use for connection to the IR Sensor when using four-pair twisted cable terminated with an RJ-45 connector at the Solo™ Master Keypad Module.

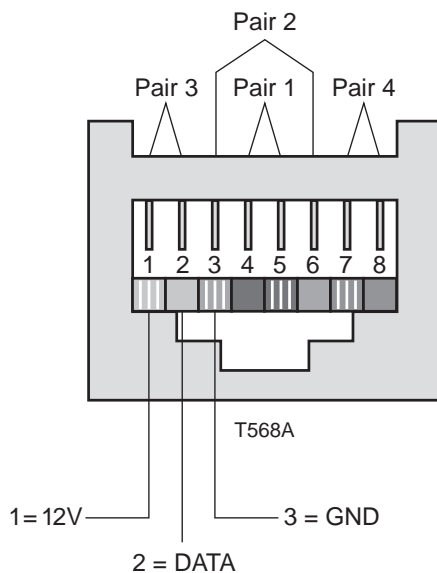


Figure 35

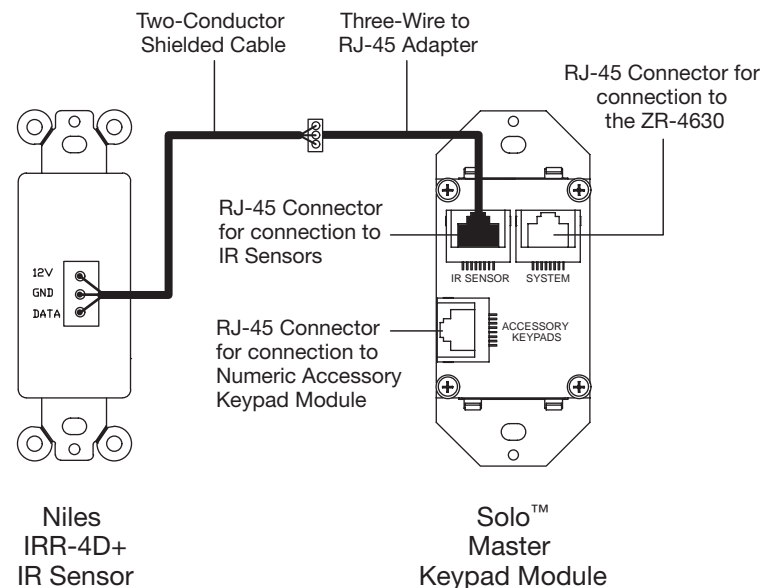


Figure 36

Connecting a Sensor Installed with Two-Conductor Shielded Cable

An IR Sensor installed with two-conductor shielded cable requires the Niles Three-Wire to RJ-45 Adapter (see Accessories) for proper connection to a Solo™ Master Keypad Module (see Figure 36). The IR Sensor connects to the two-conductor shielded cable with bare-wire, screwdown terminals (refer to the IR Sensors Installation Guide for more information). The two-conductor shielded cable then connects to the Adapter's bare-wire, screwdown terminal, matching 12V, GND, and Data respectively.

CONNECTIONS

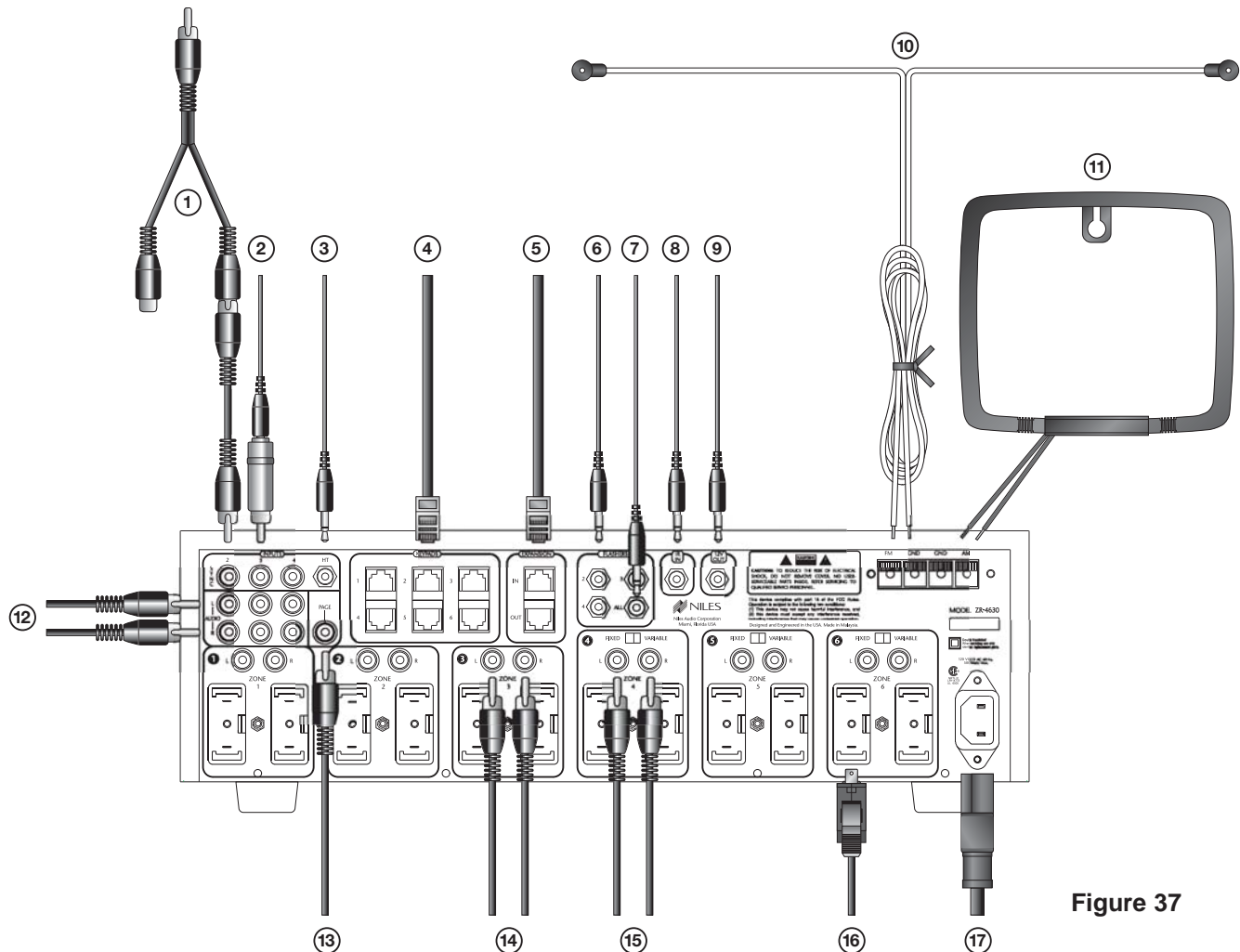


Figure 37

SOURCE-COMPONENT POWER AND HOME THEATER SYNCHRONIZATION SIGNALS

① Video Synchronization from a Source Component to a ZR-4630 Sync Input

An RCA Y-adapter is used to split the video output of a source component for connection to one of the three Source Sync Inputs of the ZR-4630 (2, 3, or 4). One side of the RCA Y-adapter connects to the appropriate Source Sync Input and the other side connects to the intended destination for the video signal (i.e., the video input of a TV, receiver or RF modulator).

The need for an RCA Y-adapter can be avoided if your video source has two video outputs. One video output connects to a Source Sync Input and the other to the intended destination of the video signal.

Important Note: Source Sync Inputs are designed with high-input impedances so as not to affect the quality of the video signal when using an RCA Y-adapter.

② Voltage Sync from a Source Component to a ZR-4630 Sync Input

When obtaining a 12V sync signal from a source component (refer to the Source Power Synchronization section of this manual for more information), a Niles Accessory Cable (FG00724) connected to a Radio Shack 274-326 mini-plug to male RCA adapter provides proper connection to any of the three Source Sync Inputs.

③ 12V Home Theater Sync to Home Theater Sync Input

The 12V Home Theater sync signal connects with a mini-plug to the Home Theater Sync Input.

KEYPAD MODULES

④ Keypads to Keypad Inputs for Zones 1-6

Four-pair twisted cable, terminated with male RJ-45 plugs, connects the keypads to the zoned Keypad Inputs (for more information on Terminating Four-Pair Twisted Cable, refer to page 44).

CONNECTIONS

SYSTEM EXPANSION

- ⑤ **System Expansion Input to System Expansion Output**
Four-pair twisted cable, terminated with male RJ-45 plugs, connects multiple ZR-4630's using the System Expansion Input and Output terminals. Connections are made from the Input of one of the ZR-4630's to the Output of another, and so on (for more information on Terminating Four-Pair Twisted Cable, refer to page 44).

IR FLASHERS

- ⑥ **Low-Output Flasher to the Flasher Outputs**
The mini-plug end of a Niles Low Output MicroFlasher™, Model IRC-2P (FG00726), connects into the Flasher Outputs 2-4. The Micro-Flasher portion of the IRC-2P is placed directly over the IR sensor of the corresponding source component (Source 2 for Flasher 2, Source 3 for Flasher, Source 4 for Flasher 4) and adheres with the included peel-back tape.
- ⑦ **High-Output Flasher to the Flasher Outputs**
The mini-plug end of a Niles High Output Flasher, Model IRC-1P (FG00932), connects to the Flasher Output labeled ALL. The IRC-1P is strategically positioned to provide IR transmission to all source components and adheres with its included Velcro mounting system.

HOME THEATER CONTROL SYSTEM

- ⑧ **IR Output of a Home Theater Control System to the IR In**
The mini-plug end of a Niles Accessory Cable (FG00724) connects a Home Theater Control System to the IR Input.

12V CONTROL SIGNALS

- ⑨ **12V Control Output to a Voltage Triggered Device**
The mini-plug end of a Niles Accessory Cable (FG00724) connects the 12V Control Output to the Trigger Input of a voltage-activated device (i.e., Niles AC-3).

AM/FM ANTENNAS

- ⑩ **FM Dipole Antenna**
The included FM Dipole Antenna connects with its bare-wire ends to the spring-loaded terminals labeled FM and GND. The antenna is then positioned and mounted for proper reception.

- ⑪ **AM Loop Antenna**

The included AM Loop Antenna connects with its bare-wire ends to the spring-loaded terminals labeled AM and GND. The antenna is then positioned and mounted for proper reception.

SOURCE-COMPONENT AUDIO SIGNALS

- ⑫ **Audio Output of Source Components to the ZR-4630**
Male-to-male RCA Audio Cables connect the three external audio sources.

TELEPHONE PAGING

- ⑬ **Paging Output of Telephone System to ZR-4630 Page Input**
A male-to-male RCA Audio Cable connects the paging output of a telephone system to the ZR-4630.

PREAMPLIFIER ZONE OUTPUTS

- ⑭ **Zones 1-6 (4-6 set to Variable Mode)**
Male to male RCA Audio Cables connect Zone Outputs 1-6 to an external amplifier for more power in a zone (refer to System Configurations 8 & 9 for more details).
- ⑮ **Zones 4-6 Set to Fixed Mode**
Male to male RCA Audio Cables connect Zone Outputs 4-6 (set to fixed output mode) to an external amplifier for more rooms in a zone (refer to Configuration 10 for more details).

SPEAKERS

- ⑯ **Zones 1-6**
Niles no-strip connectors connect speaker wires from the speakers placed in the listening zones.

AC POWER

- ⑰ **Removable AC Power Cord**
The removable AC power cord (included with the ZR-4630) connects to the removable power-cord socket and to an AC power outlet.

CONNECTIONS

CONNECTING AN IR SENSOR FOR LOCAL SYSTEM CONTROL

IR Sensors installed in zones for hand-held IR remote control of the ZR-4630 and its source components can also be used to control local components (i.e., a TV, DSS, DVD, and a surround-sound system located in the master bedroom zone as shown in figure 38).

The IR Sensor connects normally to the Solo™ Master Keypad to control the ZR-4630 and its connected source components. In addition, the IR Sensor connects to a local IR repeating system (DATA and GND connections only), to provide control of local components.

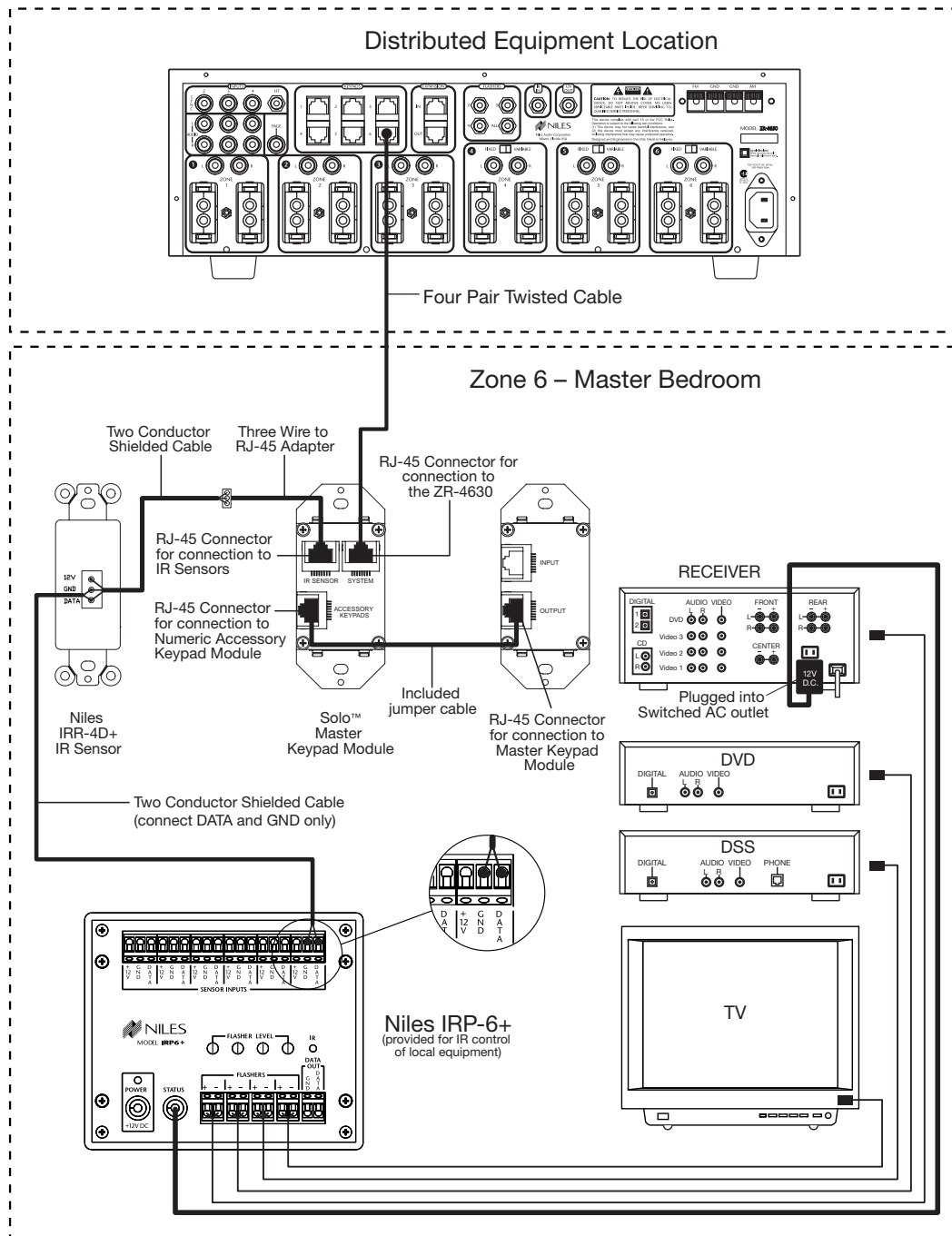


Figure 38

CONNECTIONS

CONNECTING AN A/B AMPLIFIER SWITCH FOR LOCAL SYSTEM SELECTION

A Niles SPK-1 Voltage Activated Speaker Level A/B Switcher connects to both the ZR-4630 and a local system to provide sound from each system to the same speakers located in a single zone. The local system only connects to the speakers when the local system is turned on. The Niles ZR-4630 connects to the speakers by default when the local system is off.

In Figure 39, the Zoned Speaker Output of the ZR-4630 connects to the "A" side of the SPK-1. The Main Speaker Output of the local system connects to the "B" side of the SPK-1. In addition, a 12V DC power adapter (Niles FG00665) is plugged into a switched AC outlet of the local system to activate the SPK-1.

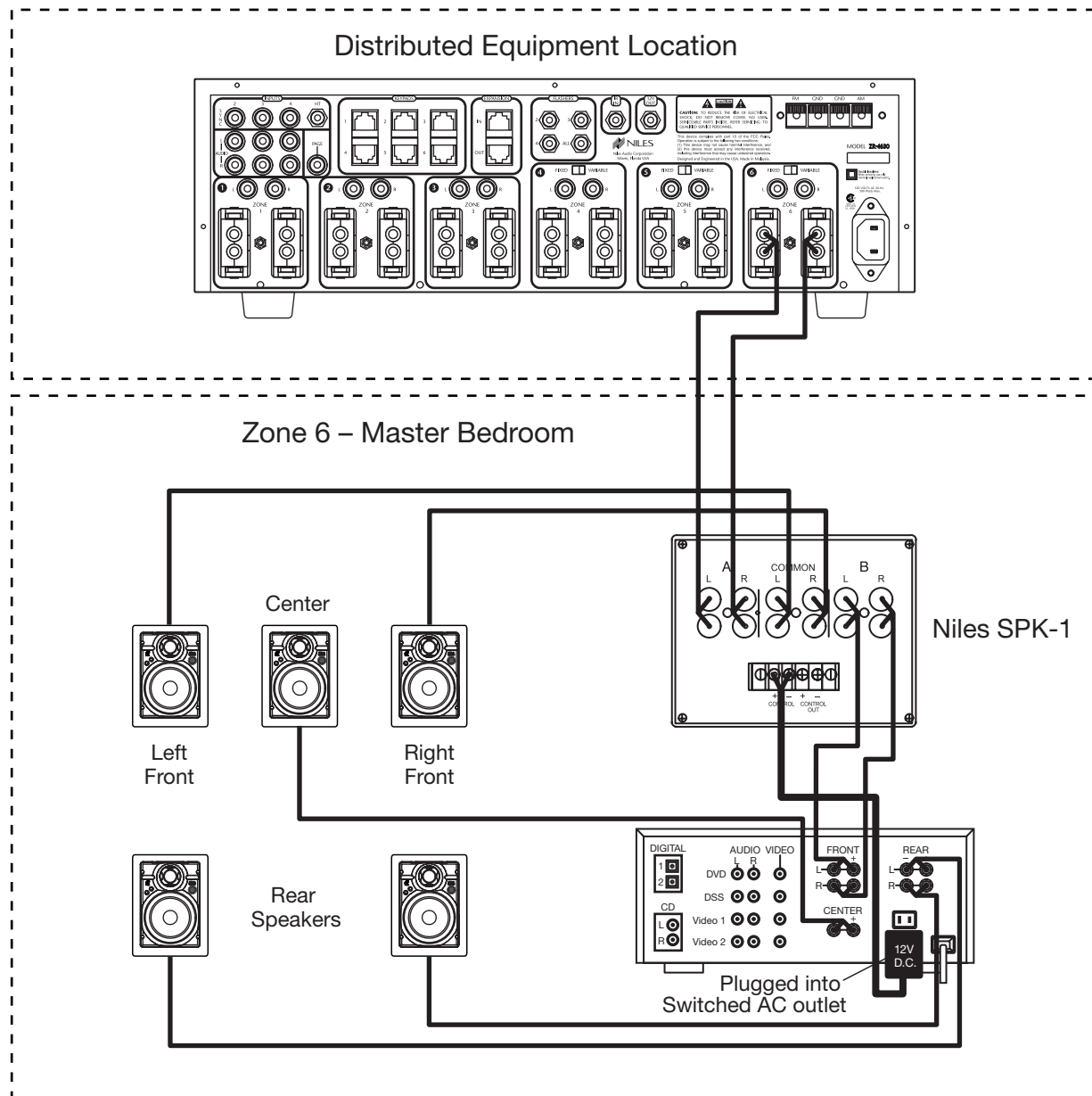


Figure 39

PROGRAMMING OVERVIEW

INSTALLER PROGRAMMING PANEL

IR commands needed for control of connected external source-components are programmed into the ZR-4630's program memory using the hidden programming controls on the front panel (see figure 42).

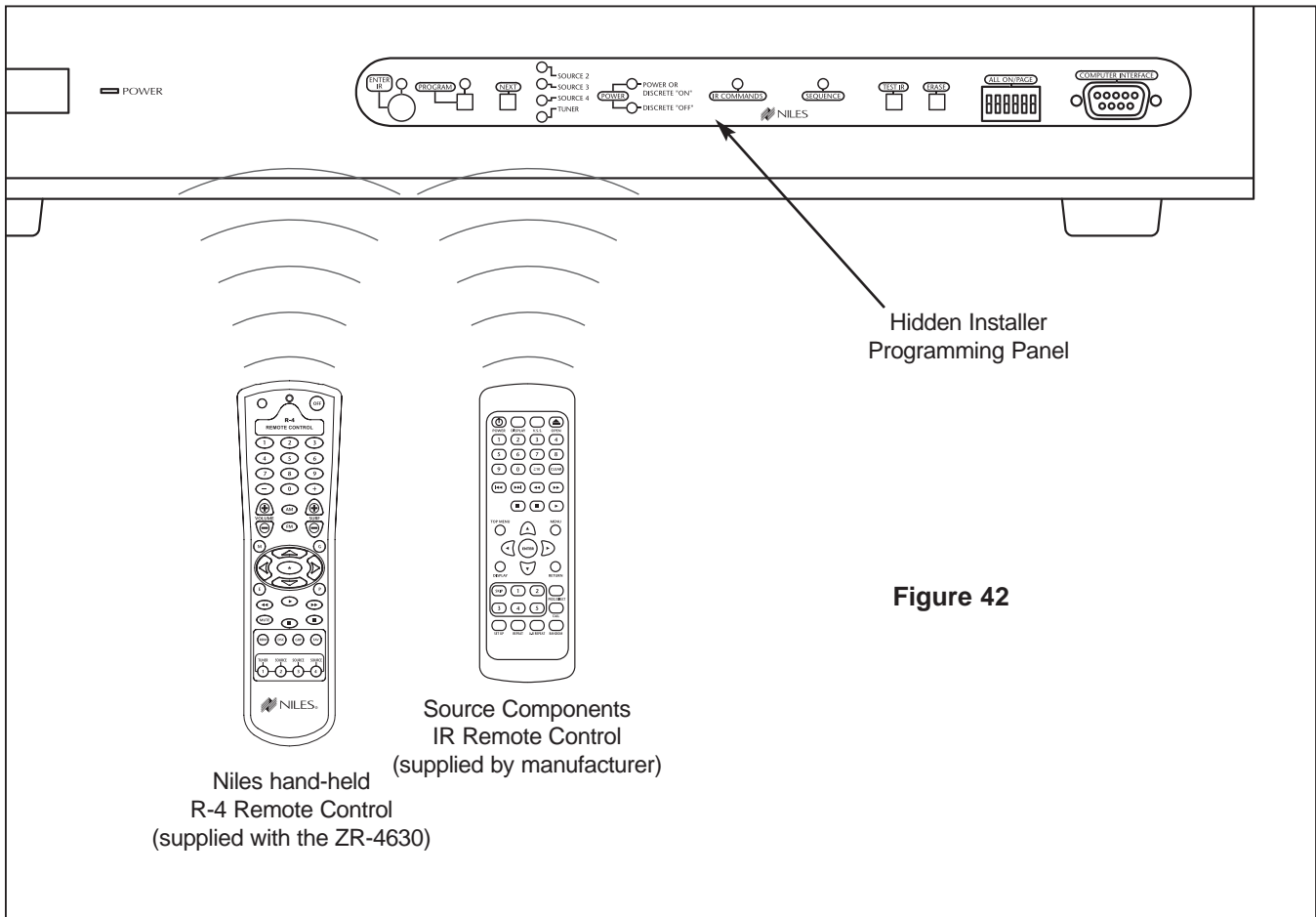


Figure 42

Programming is accomplished using the hidden panels push buttons and LED prompts along with sending IR commands with both the Niles remote and the remotes supplied with the source components. For complete information on the ZR-4630's step-by-step programming procedure, refer to the Programming Steps section of this manual.

PROGRAMMING DOCUMENTATION

Documenting the ZR-4630's programming is critical prior to executing the programming procedure. Program documentation enables you to accomplish programming quickly and accurately, and provides a record of the configuration for future reference. Programming Worksheets are provided in this manual (see the Programming Worksheet section) to document all system configuration programming, including IR commands and sequences.

Note: Use a pencil when documenting. If you need additional sheets, make photocopies.

PROGRAMMING OVERVIEW

ZR-4630 Programming Worksheet

A completed Tuner and Zone Label Programming Worksheet is required for each ZR-4630 installed in a system. The programming information that should be included is detailed in figure 43.

1 JOB TITLE

Mr. Smith

Document the customer's name.

2 SYSTEM DESIGNER

Joe Installer

Document the system designer's name.

3 UNIT MODE AND ZONE LABELS (CHOOSE ONLY ONE: A, B OR C)

☒ (A) MASTER Kitchen Patio Jacuzzi Exercise Bedroom Terrace

1 2 3 4 5 6

☐ (B) SLAVE

7 8 9 10 11 12

☐ (C) SLAVE 2

13 14 15 16 17 18

Document the Master, Slave 1, or Slave 2 setting. Document the Labels used for the Zone Label slots.

4 TUNER PRESETS

AM				FM			
1	<u>620</u>	6	<u>1070</u>	1	<u>93.9</u>	6	<u>103.5</u>
2	<u>830</u>	7	<u>1090</u>	2	<u>94.9</u>	7	<u>104.7</u>
3	<u>910</u>	8	<u>1110</u>	3	<u>96.5</u>	8	<u>105.1</u>
4	<u>1010</u>	9	<u>1140</u>	4	<u>100.7</u>	9	<u>106.5</u>
5	<u>1050</u>	10	<u>1160</u>	5	<u>102.3</u>	10	<u>107.9</u>

Document the AM and FM Presets stored in the Tuner Memory.

5 TUNER SEQUENCE

STEP	TUNER COMMAND	STEP	TUNER COMMAND
1	<u>FM</u>	6	
2	<u>Fav</u>	7	
3	<u>1</u>	8	
4		9	
5		10	

Document the Tuner Sequence.

6 ALL ON/PAGE

ZONE	ALL ON / PAGE
1	<input type="checkbox"/>
2	<input type="checkbox"/>
3	<input type="checkbox"/>
4	<input type="checkbox"/>
5	<input type="checkbox"/>
6	<input type="checkbox"/>

There are DIP switches on the front panel to determine which zones will be enabled to the ALL-ON and PAGE features.

Check the ones that have been enabled to the ALL-ON/PAGE feature.

7 VOLUME SETTINGS

ON VOLUME

MAX VOLUME

PAGE VOLUME

Note: Volume Settings affect all Zones.

Document the numeric value for each volume setting.

8 PREAMP OUTPUTS *Zones 1-3 are variable only.

	AMP	FIXED/VARIABLE
1	<u> </u>	<u>*</u>
2	<u> </u>	<u>*</u>
3	<u> </u>	<u>*</u>
4	<u> </u>	<input type="checkbox"/> / <input type="checkbox"/>
5	<u> </u>	<input type="checkbox"/> / <input type="checkbox"/>
6	<u> </u>	<input type="checkbox"/> / <input type="checkbox"/>

Document the amplifier to which the preamp outputs are connected, and the mode selected (i.e., fixed or variable for zones 4, 5, and 6).

Figure 43

PROGRAMMING OVERVIEW

ZR-4630 Source-Component Programming Worksheet

A completed source-component Programming Worksheet is required for each source-component included in the system. The programming information that should be included is detailed in figures 44, 45, and 46.

1 JOB TITLE <div style="border: 1px solid black; padding: 5px; text-align: center; font-size: 1.2em;">Mr. Smith</div> <p style="text-align: center;">Document the customer's name.</p>	2 SYSTEM DESIGNER <div style="border: 1px solid black; padding: 5px; text-align: center; font-size: 1.2em;">Joe Installer</div> <p style="text-align: center;">Document the system designer's name.</p>
--	---

3 CHOOSE MASTER KEY	
MASTER KEY NUMBER (2, 3, 4): 2	MASTER KEY LABEL: DVD

Document the number of the Master Key

Document the label used for the Master Key
(i.e., source component, music category, or DSS/Radio Station, etc.)

Document the brand and model number of the source component that is associated with the Master Key

4 PROGRAM SOURCE COMPONENT POWER			
COMPONENT			
BRAND: Denon		MODEL: DVD-2800	
COMPONENT SYNC		POWER PROGRAMMING	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, SYNC TYPE: <input checked="" type="checkbox"/> Video <input type="checkbox"/> 12V	<input checked="" type="checkbox"/> Single "Power" IR Command <input type="checkbox"/> Two Separate ON and OFF IR Commands <input type="checkbox"/> Latching Power	

Document if the source-component is connected to a sync input. If yes, document the sync type

Document the type of activation the source component requires

Figure 44

PROGRAMMING OVERVIEW

Function Keys/Buttons Programming

Figure 45 depicts the section of the Programming Worksheet that corresponds to the source-component function key/button programming. Each programmed source component has one worksheet filled out specifying what particular IR commands have been programmed and to which function key/button they have been assigned.

5 PROGRAM FUNCTION KEY IR COMMANDS			
FUNCTION KEY/BUTTON	SOURCE IR COMMAND	FUNCTION KEY/BUTTON	SOURCE IR COMMAND
Play	Play	FM	
Stop	Stop	1	1
Pause	Pause	2	2
Rewind <<	Rewind	3	3
FF>>	Fast Forward	4	4
*	Pause	5	5
Arrow Up		6	6
Arrow Down		7	7
Arrow Right	Next Chapter	8	8
Arrow Left	Last Chapter	9	9
M		0	0
G		-	
E		+	
P		Random	Random
Surf +	Next Chapter	Group	
Surf -	Last Chapter	Disc	
AM		Fav	

Document the IR commands in their function key/button locations

Figure 45

Sequence Programming

Figure 46 depicts the section of the Programming Worksheet that corresponds to the Sequence programming. Each programmed source component has one worksheet filled out specifying what particular IR commands and delays have been programmed to the Master Keys Sequence.

6 PROGRAM SEQUENCE					
STEP	SOURCE IR COMMAND or DELAY	FUNCTION KEY/BUTTON or DELAY TIME	STEP	SOURCE IR COMMAND or DELAY	FUNCTION KEY/BUTTON or DELAY TIME
1	Play	Play	6		
2			7		
3			8		
4			9		
5			10		

Document the IR Commands and Delays included in the Sequence

Figure 46

PROGRAMMING OVERVIEW

PROGRAMMING A LEARNING REMOTE FOR ZONE OPERATION

Learning remote controls can be taught the IR commands of the Niles R-4 Remote to provide individual zone operation. These IR commands operate the ZR-4630 and its associated source components from any zone equipped with an IR Sensor.

Important Note: IR Sensors cannot operate a zone when used alone. They must be installed and connected to a Solo™ Master Keypad Module.

The commands you will teach from the Niles R-4 Remote to the learning remote are stored in the following buttons:

1. Source buttons Tuner, 2, 3, and 4. These activate the system, turn the zones on, and select the desired source. The Tuner button always selects the built-in tuner.
2. Function buttons to issue the IR commands for each of the individual source components.
3. Volume and mute buttons to control the volume in a zone.
4. The Off button to turn off the zones.

To teach these commands, simply take the learning remote that you will be using in the zone, set it to the learning mode, choose the appropriate key on the learning remote, and then issue the appropriate command from the Niles R-4 Remote. Repeat these steps for the remaining commands you wish to use.

To test the commands, set the Niles remote aside, take your learning remote, and try the commands. If they were captured correctly, you will be operating the system and all the source components identically to the Niles R-4 Remote.

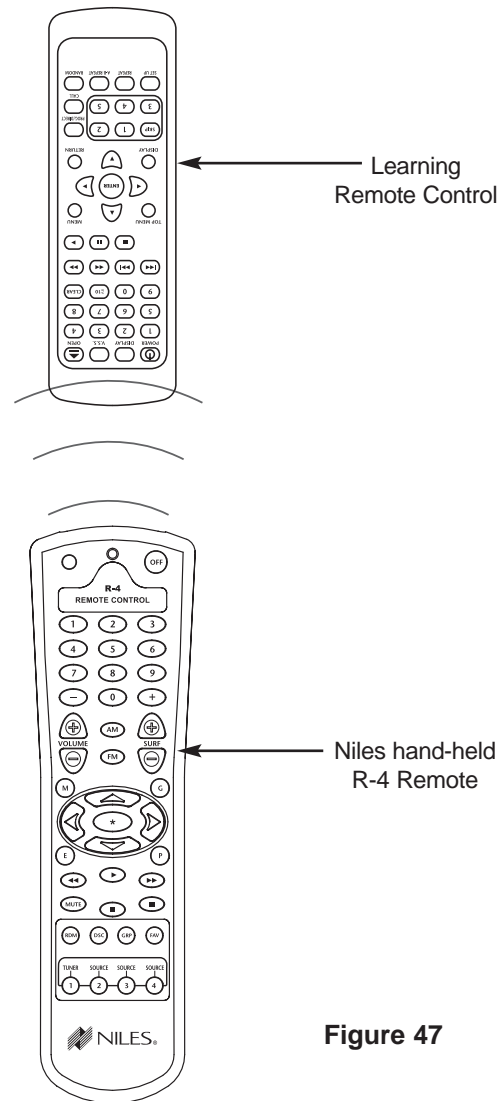


Figure 47

PROGRAMMING A HOME THEATER REMOTE CONTROL TO OPERATE SOURCE COMPONENTS SHARED WITH A ZR-4630

A learning remote control operating a home theater system can be programmed to operate source components shared with the ZR-4630 (refer to System Configurations 4 and 5).

The learning remote control may be programmed with the source component's factory IR commands using the ZR-4630's IR Repeating feature (see Method 1), or it can be programmed with the Niles R-4 Remote Control IR commands (see Methods 2 & 3).

PROGRAMMING OVERVIEW

Method #1—Controlling Shared Source Components with IR Repeating and 12V Home Theater Status

When using IR Repeating, IR programming for the source components can be accomplished by programming the actual IR commands from the source component's included remote control into the Home Theater learning remote control. An IR output of the IR repeating or control system for the Home Theater is connected to the IR Input of the Master ZR-4630. All the IR commands sent from the Home Theater are then passed through to all IR Flashers connected to the ZR-4630 for control of source components.

Important Note: If you have source components that require an IR command to be turned on and they are not provided with a separate ON and a separate OFF IR command from their included remote controls, or if you have two or more shared source components that are an identical brand and model, refer to Method #2.

All the IR command programming of the Home Theater learning remote control is done in the standard way using the actual remote controls for the shared source components, with **one** exception. The OFF IR command for the shared source components is not taught to the learning remote operating the home theater. Only the ON IR commands are taught for the shared source components turned ON and OFF via IR commands. The OFF IR commands for the shared source components are programmed into the ZR-4630, which is responsible for turning these components OFF when all ZR-4630 zones and the home theater are OFF.

Method #1 requires a 12V DC system status signal provided from the Home Theater system to the Home Theater Sync Input of the Master ZR-4630. This allows the ZR-4630 to “know” whether the Home Theater is actually ON or OFF and provide the source components’ OFF commands at the appropriate time.

The IR programming for the actual Home Theater receiver/processor is not affected when sharing source components using this method and is done in conjunction with programming described.

Method #2—Controlling Shared Source Components with Niles R-4 Commands and 12V Home Theater Status

A second method of programming a Home Theater remote control is available when the shared source components are identical and/or they have a single power ON/OFF IR command. With this method, you

teach the Niles R-4 Remote Control IR commands to the Home Theater learning remote, rather than the IR commands from the remote controls included with the shared source components.

You teach the Home Theater learning remote control the R-4 IR commands issued from Source Buttons 2, 3, 4, and all other commands (excluding Tuner, Volume +, Volume –, Mute, and OFF). Sending a Niles Source Button IR command from the Home Theater tells the ZR-4630 receiver the Home Theater is turning on and which source it is selecting. Synchronized source components corresponding to the source button pressed are then turned ON, if not already ON. Finally, the ZR-4630 issues the sequence that is programmed for that source component.

After the Master ZR-4630 receives a Source Button IR command and it knows which source is selected, it will then issue the programmed IR commands for that source component when function-key IR commands are received from the Home Theater.

Identical shared source components are operated individually using this method via the IR routing feature of the ZR-4630 (refer to Identical Source Components in the Operational Overview Section).

Method #2 requires a 12V DC system status signal provided from the Home Theater system to the Home Theater Sync Input of the Master ZR-4630. This allows the ZR-4630 to “know” whether the home theater is actually ON or OFF and provide the source components’ OFF commands at the appropriate time.

The IR programming for the actual Home Theater receiver/processor is not affected when sharing source components with this method and is done in conjunction with the programming described.

Important Note: There is no need to teach the Niles OFF command to the Home Theater learning remote control when using Method #2. As in Method #1, when the Home Theater turns off, the 12V signal is removed from the ZR-4630 Receiver and it now “knows” that the Home Theater turned off. It will then check if there are any other zones on the ZR-4630 active before it turns off the shared source components.

PROGRAMMING OVERVIEW

Method #3 – Controlling Shared Source Components with Niles R-4 Commands and without 12V Home Theater Status

A third method of programming is available in situations where a 12V DC status signal is not available from the Home Theater. With this method, you must teach some of the Niles R-4 Remote Control IR commands to the Home Theater learning remote.

The minimum requirement is to program the learning remote with Niles commands from Source Buttons 2, 3, or 4, and the OFF Button IR commands. Whenever the Master ZR-4630 receives a source-button IR command from the Home Theater, it will turn on the source component, if needed, and it will also know that the Home Theater Zone is turning on and what source component is selected. Whenever the Master ZR-4630 receives an OFF Button IR command from the Home Theater, it will know that the Home Theater is turning OFF.

To operate the Shared Source Components follow the criteria specified in Method #1 and Method #2, to select the most appropriate way to operate for your system. You can program the Home Theater's learning remote with either the components' IR commands or with Niles function button commands when using this method.

Important Note: You must teach the Niles OFF IR command to the Home Theater learning remote control and issue it every time you turn the Home Theater off when using Method #3. When the OFF IR command is received by the ZR-4630 Receiver, it “knows” that the Home Theater turned off. It will then check for any active zones on the ZR-4630 before it turns off the shared source components.

ZR-4630

PROGRAMMING WORKSHEET



1 JOB TITLE

2 SYSTEM DESIGNER

3 UNIT MODE AND ZONE LABELS (CHOOSE ONLY ONE: A, B OR C)

☐ (A) MASTER 1 2 3 4 5 6

☐ (B) SLAVE 1 7 8 9 10 11 12

☐ (C) SLAVE 2 13 14 15 16 17 18

4 TUNER PRESETS

AM		FM	
1 _____	6 _____	1 _____	6 _____
2 _____	7 _____	2 _____	7 _____
3 _____	8 _____	3 _____	8 _____
4 _____	9 _____	4 _____	9 _____
5 _____	10 _____	5 _____	10 _____

5 TUNER SEQUENCE

STEP	TUNER COMMAND	STEP	TUNER COMMAND
1		6	
2		7	
3		8	
4		9	
5		10	

6 ALL ON/PAGE

ZONE	ALL ON / PAGE
1	<input type="checkbox"/>
2	<input type="checkbox"/>
3	<input type="checkbox"/>
4	<input type="checkbox"/>
5	<input type="checkbox"/>
6	<input type="checkbox"/>

7 VOLUME SETTINGS

ON VOLUME _____

MAX VOLUME _____

PAGE VOLUME _____

Note: Volume Settings affect all Zones.

8 PREAMP OUTPUTS

*Zones 1-3 are variable only.

AMP	FIXED/VARIABLE
1 _____	*
2 _____	*
3 _____	*
4 _____	<input type="checkbox"/> / <input type="checkbox"/>
5 _____	<input type="checkbox"/> / <input type="checkbox"/>
6 _____	<input type="checkbox"/> / <input type="checkbox"/>

ZR-4630

PROGRAMMING WORKSHEET



1 JOB TITLE

2 SYSTEM DESIGNER

3 UNIT MODE AND ZONE LABELS (CHOOSE ONLY ONE: A, B OR C)

☐ (A) MASTER 1 2 3 4 5 6

☐ (B) SLAVE 1 7 8 9 10 11 12

☐ (C) SLAVE 2 13 14 15 16 17 18

4 TUNER PRESETS

AM		FM	
1 <input type="text"/>	6 <input type="text"/>	1 <input type="text"/>	6 <input type="text"/>
2 <input type="text"/>	7 <input type="text"/>	2 <input type="text"/>	7 <input type="text"/>
3 <input type="text"/>	8 <input type="text"/>	3 <input type="text"/>	8 <input type="text"/>
4 <input type="text"/>	9 <input type="text"/>	4 <input type="text"/>	9 <input type="text"/>
5 <input type="text"/>	10 <input type="text"/>	5 <input type="text"/>	10 <input type="text"/>

5 TUNER SEQUENCE

STEP	TUNER COMMAND	STEP	TUNER COMMAND
1	<input type="text"/>	6	<input type="text"/>
2	<input type="text"/>	7	<input type="text"/>
3	<input type="text"/>	8	<input type="text"/>
4	<input type="text"/>	9	<input type="text"/>
5	<input type="text"/>	10	<input type="text"/>

6 ALL ON/PAGE

ZONE	ALL ON / PAGE
1	<input type="checkbox"/>
2	<input type="checkbox"/>
3	<input type="checkbox"/>
4	<input type="checkbox"/>
5	<input type="checkbox"/>
6	<input type="checkbox"/>

7 VOLUME SETTINGS

ON VOLUME

MAX VOLUME

PAGE VOLUME

Note: Volume Settings affect all Zones.

8 PREAMP OUTPUTS

*Zones 1-3 are variable only.

AMP	FIXED/VARIABLE
1 <input type="text"/>	*
2 <input type="text"/>	*
3 <input type="text"/>	*
4 <input type="text"/>	<input type="checkbox"/> / <input type="checkbox"/>
5 <input type="text"/>	<input type="checkbox"/> / <input type="checkbox"/>
6 <input type="text"/>	<input type="checkbox"/> / <input type="checkbox"/>

ZR-4630

PROGRAMMING WORKSHEET



1 JOB TITLE

2 SYSTEM DESIGNER

3 UNIT MODE AND ZONE LABELS (CHOOSE ONLY ONE: A, B OR C)

☐ (A) MASTER 1 2 3 4 5 6

☐ (B) SLAVE 1 7 8 9 10 11 12

☐ (C) SLAVE 2 13 14 15 16 17 18

4 TUNER PRESETS

AM		FM	
1 <input type="text"/>	6 <input type="text"/>	1 <input type="text"/>	6 <input type="text"/>
2 <input type="text"/>	7 <input type="text"/>	2 <input type="text"/>	7 <input type="text"/>
3 <input type="text"/>	8 <input type="text"/>	3 <input type="text"/>	8 <input type="text"/>
4 <input type="text"/>	9 <input type="text"/>	4 <input type="text"/>	9 <input type="text"/>
5 <input type="text"/>	10 <input type="text"/>	5 <input type="text"/>	10 <input type="text"/>

5 TUNER SEQUENCE

STEP	TUNER COMMAND	STEP	TUNER COMMAND
1	<input type="text"/>	6	<input type="text"/>
2	<input type="text"/>	7	<input type="text"/>
3	<input type="text"/>	8	<input type="text"/>
4	<input type="text"/>	9	<input type="text"/>
5	<input type="text"/>	10	<input type="text"/>

6 ALL ON/PAGE

ZONE	ALL ON / PAGE
1	<input type="checkbox"/>
2	<input type="checkbox"/>
3	<input type="checkbox"/>
4	<input type="checkbox"/>
5	<input type="checkbox"/>
6	<input type="checkbox"/>

7 VOLUME SETTINGS

ON VOLUME

MAX VOLUME

PAGE VOLUME

Note: Volume Settings affect all Zones.

8 PREAMP OUTPUTS

*Zones 1-3 are variable only.

AMP	FIXED/VARIABLE
1 <input type="text"/>	*
2 <input type="text"/>	*
3 <input type="text"/>	*
4 <input type="text"/>	<input type="checkbox"/> / <input type="checkbox"/>
5 <input type="text"/>	<input type="checkbox"/> / <input type="checkbox"/>
6 <input type="text"/>	<input type="checkbox"/> / <input type="checkbox"/>

ZR-4630

PROGRAMMING WORKSHEET



1 JOB TITLE

2 SYSTEM DESIGNER

3 UNIT MODE AND ZONE LABELS (CHOOSE ONLY ONE: A, B OR C)

☐ (A) MASTER

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
1	2	3	4	5	6

☐ (B) SLAVE 1

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
7	8	9	10	11	12

☐ (C) SLAVE 2

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
13	14	15	16	17	18

4 TUNER PRESETS

AM		FM	
1 <input type="text"/>	6 <input type="text"/>	1 <input type="text"/>	6 <input type="text"/>
2 <input type="text"/>	7 <input type="text"/>	2 <input type="text"/>	7 <input type="text"/>
3 <input type="text"/>	8 <input type="text"/>	3 <input type="text"/>	8 <input type="text"/>
4 <input type="text"/>	9 <input type="text"/>	4 <input type="text"/>	9 <input type="text"/>
5 <input type="text"/>	10 <input type="text"/>	5 <input type="text"/>	10 <input type="text"/>

5 TUNER SEQUENCE

STEP	TUNER COMMAND	STEP	TUNER COMMAND
1	<input type="text"/>	6	<input type="text"/>
2	<input type="text"/>	7	<input type="text"/>
3	<input type="text"/>	8	<input type="text"/>
4	<input type="text"/>	9	<input type="text"/>
5	<input type="text"/>	10	<input type="text"/>

6 ALL ON/PAGE

ZONE	ALL ON / PAGE
1	<input type="checkbox"/>
2	<input type="checkbox"/>
3	<input type="checkbox"/>
4	<input type="checkbox"/>
5	<input type="checkbox"/>
6	<input type="checkbox"/>

7 VOLUME SETTINGS

ON VOLUME

MAX VOLUME

PAGE VOLUME

Note: Volume Settings affect all Zones.

8 PREAMP OUTPUTS

*Zones 1-3 are variable only.

AMP	FIXED/VARIABLE
1 <input type="text"/>	*
2 <input type="text"/>	*
3 <input type="text"/>	*
4 <input type="text"/>	<input type="checkbox"/> / <input type="checkbox"/>
5 <input type="text"/>	<input type="checkbox"/> / <input type="checkbox"/>
6 <input type="text"/>	<input type="checkbox"/> / <input type="checkbox"/>

ZR-4630

SOURCE COMPONENT PROGRAMMING WORKSHEET



1 JOB TITLE	2 SYSTEM DESIGNER

3 CHOOSE MASTER KEY	
MASTER KEY NUMBER (2, 3, 4): _____	MASTER KEY LABEL: _____

4 PROGRAM SOURCE COMPONENT POWER			
COMPONENT			
BRAND: _____		MODEL: _____	
COMPONENT SYNC		POWER PROGRAMMING	
<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, SYNC TYPE:	<input type="checkbox"/> Single "Power" IR Command <input type="checkbox"/> Two Separate ON and OFF IR Commands <input type="checkbox"/> Latching Power
		<input type="checkbox"/> Video <input type="checkbox"/> 12V	

5 PROGRAM FUNCTION KEY IR COMMANDS			
FUNCTION KEY/BUTTON	SOURCE IR COMMAND	FUNCTION KEY/BUTTON	SOURCE IR COMMAND
Play		FM	
Stop		1	
Pause		2	
Rewind <<		3	
FF>>		4	
*		5	
Arrow Up		6	
Arrow Down		7	
Arrow Right		8	
Arrow Left		9	
M		0	
G		-	
E		+	
P		Random	
Surf +		Group	
Surf -		Disc	
AM		Fav	

6 PROGRAM SEQUENCE					
STEP	SOURCE IR COMMAND or DELAY	FUNCTION KEY/BUTTON or DELAY TIME	STEP	SOURCE IR COMMAND or DELAY	FUNCTION KEY/BUTTON or DELAY TIME
1			6		
2			7		
3			8		
4			9		
5			10		

ZR-4630

SOURCE COMPONENT PROGRAMMING WORKSHEET



1 JOB TITLE	2 SYSTEM DESIGNER

3 CHOOSE MASTER KEY	
MASTER KEY NUMBER (2, 3, 4): _____	MASTER KEY LABEL: _____

4 PROGRAM SOURCE COMPONENT POWER			
COMPONENT			
BRAND: _____		MODEL: _____	
COMPONENT SYNC		POWER PROGRAMMING	
<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, SYNC TYPE:	<input type="checkbox"/> Single "Power" IR Command <input type="checkbox"/> Two Separate ON and OFF IR Commands <input type="checkbox"/> Latching Power
		<input type="checkbox"/> Video <input type="checkbox"/> 12V	

5 PROGRAM FUNCTION KEY IR COMMANDS			
FUNCTION KEY/BUTTON	SOURCE IR COMMAND	FUNCTION KEY/BUTTON	SOURCE IR COMMAND
Play		FM	
Stop		1	
Pause		2	
Rewind <<		3	
FF>>		4	
*		5	
Arrow Up		6	
Arrow Down		7	
Arrow Right		8	
Arrow Left		9	
M		0	
G		-	
E		+	
P		Random	
Surf +		Group	
Surf -		Disc	
AM		Fav	

6 PROGRAM SEQUENCE					
STEP	SOURCE IR COMMAND or DELAY	FUNCTION KEY/BUTTON or DELAY TIME	STEP	SOURCE IR COMMAND or DELAY	FUNCTION KEY/BUTTON or DELAY TIME
1			6		
2			7		
3			8		
4			9		
5			10		

ZR-4630

SOURCE COMPONENT PROGRAMMING WORKSHEET



1 JOB TITLE	2 SYSTEM DESIGNER

3 CHOOSE MASTER KEY	
MASTER KEY NUMBER (2, 3, 4): _____	MASTER KEY LABEL: _____

4 PROGRAM SOURCE COMPONENT POWER			
COMPONENT			
BRAND: _____		MODEL: _____	
COMPONENT SYNC		POWER PROGRAMMING	
<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, SYNC TYPE:	<input type="checkbox"/> Single "Power" IR Command <input type="checkbox"/> Two Separate ON and OFF IR Commands <input type="checkbox"/> Latching Power
		<input type="checkbox"/> Video <input type="checkbox"/> 12V	

5 PROGRAM FUNCTION KEY IR COMMANDS			
FUNCTION KEY/BUTTON	SOURCE IR COMMAND	FUNCTION KEY/BUTTON	SOURCE IR COMMAND
Play		FM	
Stop		1	
Pause		2	
Rewind <<		3	
FF>>		4	
*		5	
Arrow Up		6	
Arrow Down		7	
Arrow Right		8	
Arrow Left		9	
M		0	
G		-	
E		+	
P		Random	
Surf +		Group	
Surf -		Disc	
AM		Fav	

6 PROGRAM SEQUENCE					
STEP	SOURCE IR COMMAND or DELAY	FUNCTION KEY/BUTTON or DELAY TIME	STEP	SOURCE IR COMMAND or DELAY	FUNCTION KEY/BUTTON or DELAY TIME
1			6		
2			7		
3			8		
4			9		
5			10		

ZR-4630

SOURCE COMPONENT PROGRAMMING WORKSHEET



1 JOB TITLE	2 SYSTEM DESIGNER

3 CHOOSE MASTER KEY	
MASTER KEY NUMBER (2, 3, 4): _____	MASTER KEY LABEL: _____

4 PROGRAM SOURCE COMPONENT POWER			
COMPONENT			
BRAND: _____		MODEL: _____	
COMPONENT SYNC		POWER PROGRAMMING	
<input type="checkbox"/> Yes	<input type="checkbox"/> No	If Yes, SYNC TYPE:	
		<input type="checkbox"/> Video <input type="checkbox"/> 12V	
		<input type="checkbox"/> Single "Power" IR Command <input type="checkbox"/> Two Separate ON and OFF IR Commands <input type="checkbox"/> Latching Power	

5 PROGRAM FUNCTION KEY IR COMMANDS			
FUNCTION KEY/BUTTON	SOURCE IR COMMAND	FUNCTION KEY/BUTTON	SOURCE IR COMMAND
Play		FM	
Stop		1	
Pause		2	
Rewind <<		3	
FF>>		4	
*		5	
Arrow Up		6	
Arrow Down		7	
Arrow Right		8	
Arrow Left		9	
M		0	
G		-	
E		+	
P		Random	
Surf +		Group	
Surf -		Disc	
AM		Fav	

6 PROGRAM SEQUENCE					
STEP	SOURCE IR COMMAND or DELAY	FUNCTION KEY/BUTTON or DELAY TIME	STEP	SOURCE IR COMMAND or DELAY	FUNCTION KEY/BUTTON or DELAY TIME
1			6		
2			7		
3			8		
4			9		
5			10		

INSTALLATION SETTINGS

ALL ON/PAGE DIP SWITCH SETTINGS

There are six All ON/PAGE switches located on the hidden programming panel of the ZR-4630. Each of the ZR-4630's zones has a corresponding numbered switch (see Figure 40).

The switches enable (Up) or disable (Down) the individual zones from responding to ALL ON commands and incoming audio pages.

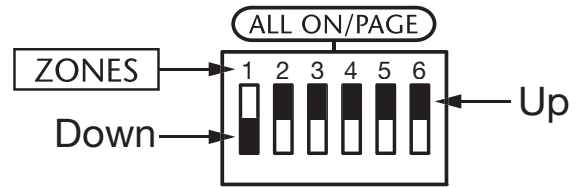


Figure 40

FIXED/VARIABLE PREAMPLIFIER SWITCH

Zones 4, 5, and 6 include a Fixed/Variable preamplifier switch (see Figure 41) located on the rear panel of the ZR-4630. The switch for these zones is set to either Variable or Fixed depending on the configuration of the speakers in the zone (see Configurations 8, 9, and 10 for more details).

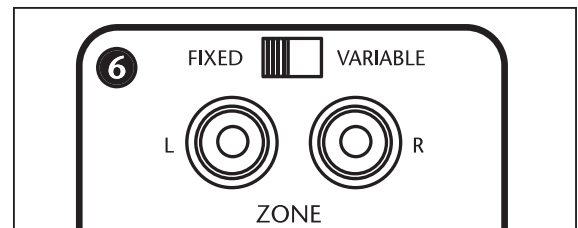


Figure 41

PROGRAMMING MASTER/SLAVE MODE

The factory default mode of the ZR-4630 MultiZone Receiver is "Master," but it can also be programmed to function as "Slave 1" or "Slave 2" in expanded systems (refer to System Configuration 2). To change the mode of any unit, follow the steps below:

1. Turn the ZR-4630 OFF.
2. Depress the PROGRAM button.
3. Turn the ZR-4630 ON and keep the PROGRAM button depressed.
4. The ZR-4630 then displays a message on the LCD Display Panel for 2 seconds, identifying its version ("Ver X.XX").
5. The ZR-4630 then displays a new mode, either "Master," "Slave 1," or "Slave 2." Which mode is selected depends on the last setting (i.e., if the last mode was of "Master," it will display "Slave 1." If last the mode was "Slave 1," it will display "Slave 2." And if the last mode was "Slave 2," it will display "Master").
6. Release the PROGRAM button. Unit is now set to a new mode.
7. Repeat Steps 1 through 6 until the ZR-4630 is in the desired mode.

INSTALLING ZONE LABELS

Each ZR-4630 is included with pre-printed Zone/Room Labels that are designed to be placed in the Zone Label Slots (see Figure 42) to identify the names of each of six zones. To install these labels follow the steps below:

1. Remove the label chosen for Zone 1 from the included Room/Zone Labels.
2. Affix the label in Zone Label Slot #1.
3. Repeat steps 1 and 2 for Zones 2 through 6.

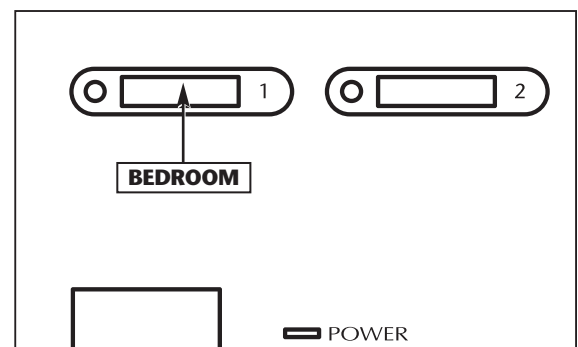


Figure 42

INSTALLATION SETTINGS

VOLUME SETTINGS

The ZR-4630 has three useful volume features with customizable settings. The following is a list of the three volume features along with their default values and a description of their purpose.

Maximum Turn ON and Source Change Volume Level

Maximum Turn ON and Source Change Volume prevents a zone from playing too loudly when it is first turned on or if the zone changes the currently selected source.

When a zone is turned ON individually, it will always turn ON to its last volume setting unless the zone's last volume setting is greater than the Maximum Turn ON and Source Change Volume Setting. When greater, the zone will turn ON to the Maximum Turn ON and Source Change Volume level set in the ZR-4630's memory.

When a zone selects a new source, the volume setting does not change unless the zone's current volume setting is greater than the Maximum Turn ON and Source Change Volume Setting. When greater, the zone will change to the Maximum Turn ON and Source Change Volume level set in the ZR-4630's memory.

The factory default level for Maximum Turn ON and Source Change Volume is 45. It can be adjusted up or down using the steps below.

ALL ON Volume Level

When a System Wide ON command is issued, zones that are turned OFF turn ON to the ALL ON Volume Level set in the ZR-4630's memory (volume levels in zones that are already turned ON do not change during a System Wide On command). The factory default level for ALL ON Volume level is 22. It can be adjusted up or down using the steps below.

Page Volume Level

When a Page occurs, all zones produce the page at the Page Volume Level set in the ZR-4630's memory. The factory default value for PAGE Volume Level is 35. It can be adjusted up or down using the steps below.

Changing Volume Settings

Step 1. Press and Hold the PROGRAM button for two seconds.

The Program LED lights RED, the Source 2 LED lights RED, Power/On LED Blinks RED, and the Enter IR lights RED. The LCD display shows "PGM MODE"

Step 2. Press the AM/FM button.

The LCD display shows "MxVol 45"

"MxVol" is the Maximum Turn ON and Source Change Volume Level.

Step 3. Press the Tune + button to increase MxVol or press the Tune - to decrease MxVol.

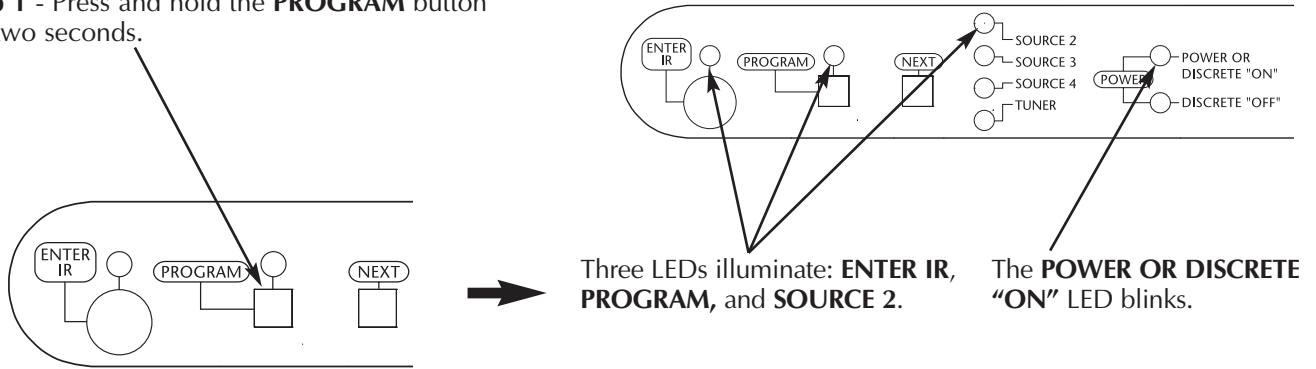
Step 4. Press the AM/FM button or NEXT button to advance to the next volume-setting feature (shown in the LCD Display) and repeat steps 3 and 4 for each.

Step 5. Press the PROGRAM button twice to exit programming.

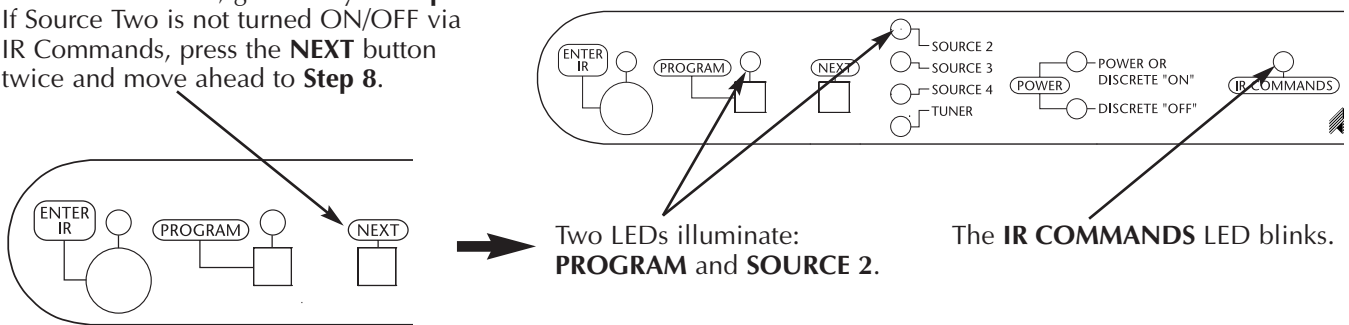
SYSTEM PROGRAMMING STEPS

PROGRAMMING THE SOURCE COMPONENTS

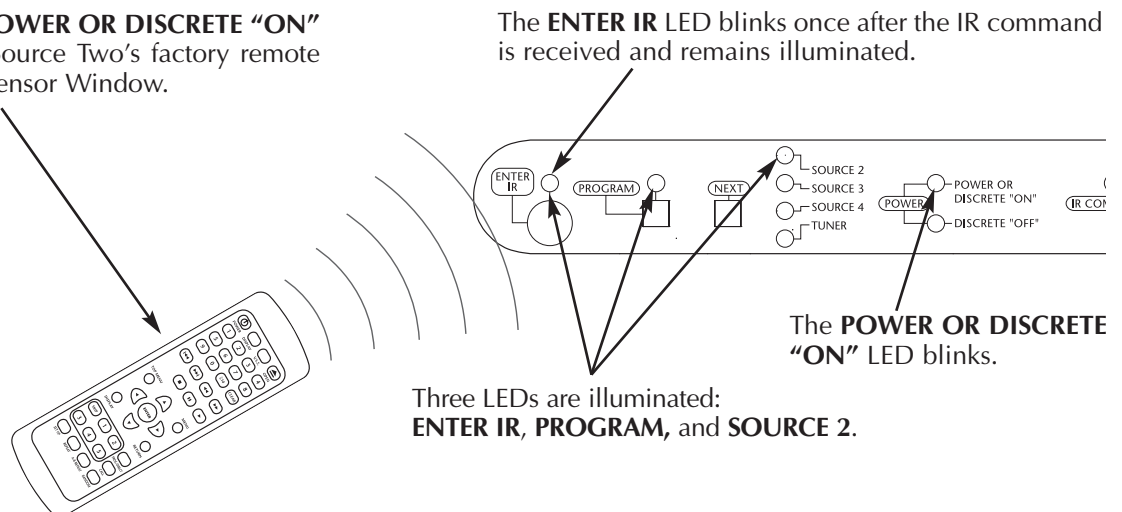
Step 1 - Press and hold the **PROGRAM** button for two seconds.



Step 2 - If Source Two is turned ON/OFF with IR commands, go directly to **Step 3**. If Source Two is not turned ON/OFF via IR Commands, press the **NEXT** button twice and move ahead to **Step 8**.



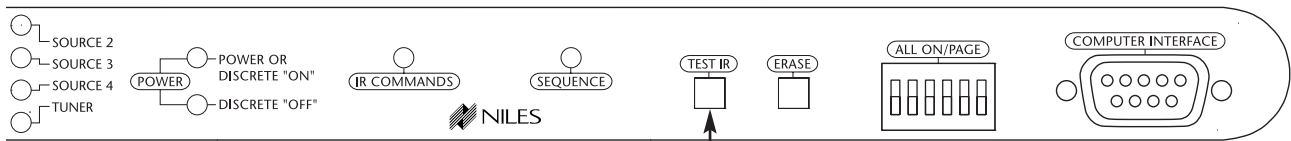
Step 3 - Teach the **POWER OR DISCRETE "ON"** IR command from Source Two's factory remote control into the IR Sensor Window.



SYSTEM PROGRAMMING STEPS

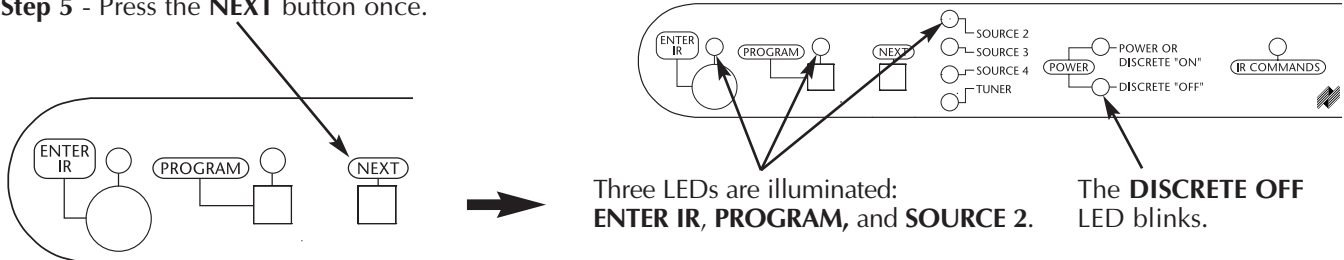
Step 4 - You can test the IR command by pressing the **TEST IR** button. The source will operate if the command has been taught correctly. If it does not, reteach the IR command until the source operates.

Repositioning the remote control while reteaching can help to capture the command accurately.

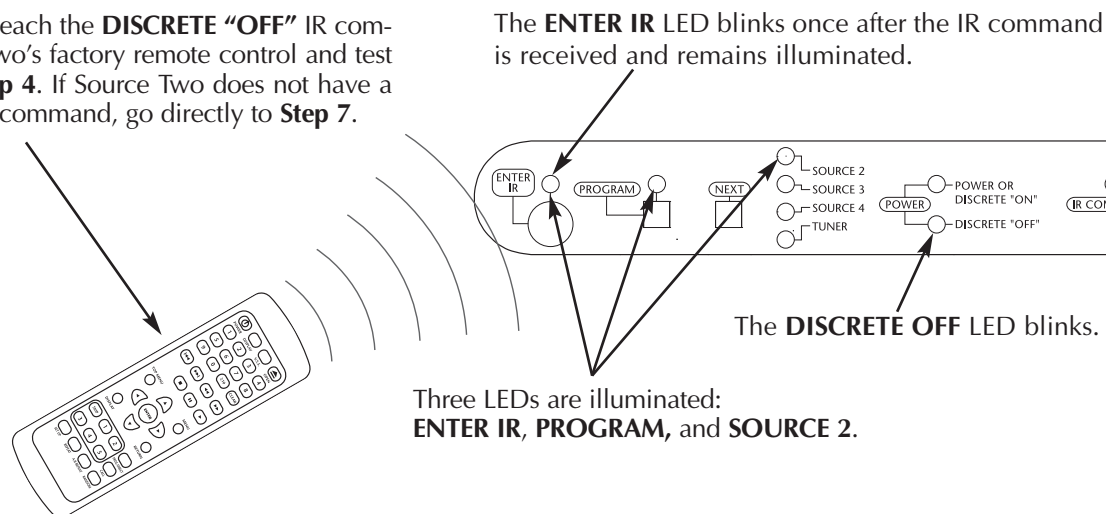


Pressing the **TEST IR** button issues the last IR command taught.

Step 5 - Press the **NEXT** button once.

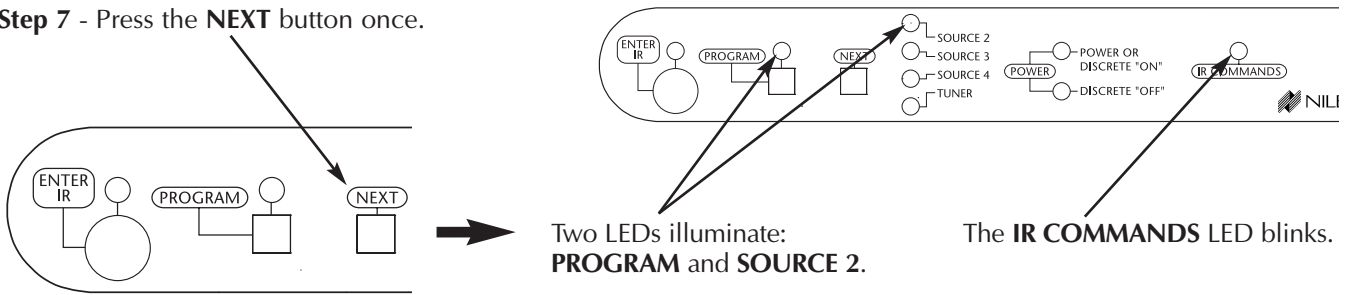


Step 6 - If provided, teach the **DISCRETE "OFF"** IR command from Source Two's factory remote control and test it as described in **Step 4**. If Source Two does not have a **DISCRETE "OFF"** IR command, go directly to **Step 7**.

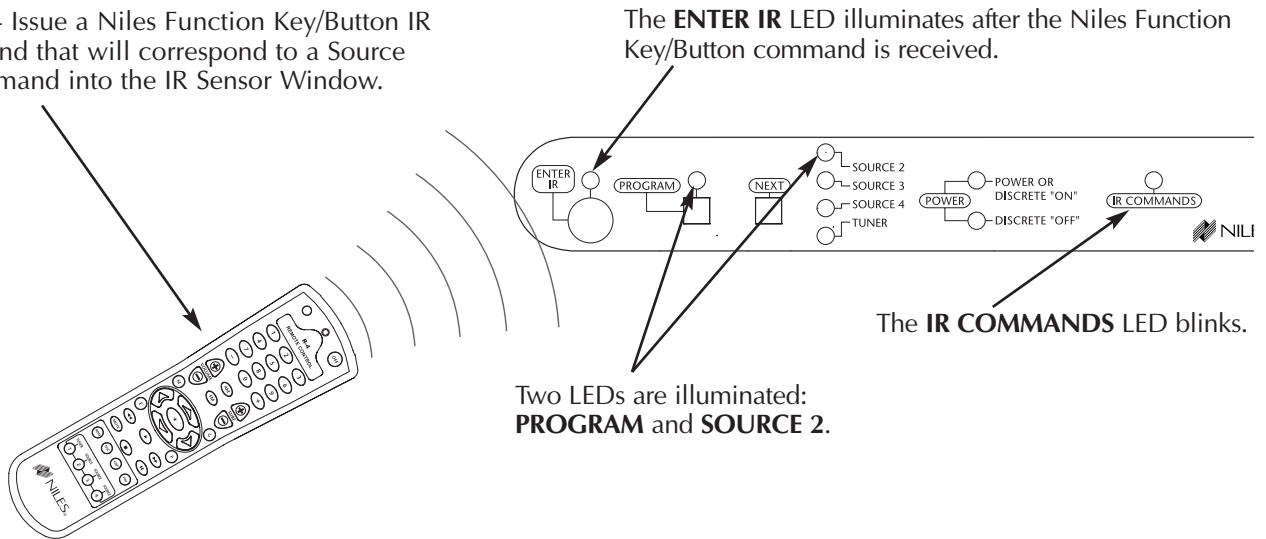


SYSTEM PROGRAMMING STEPS

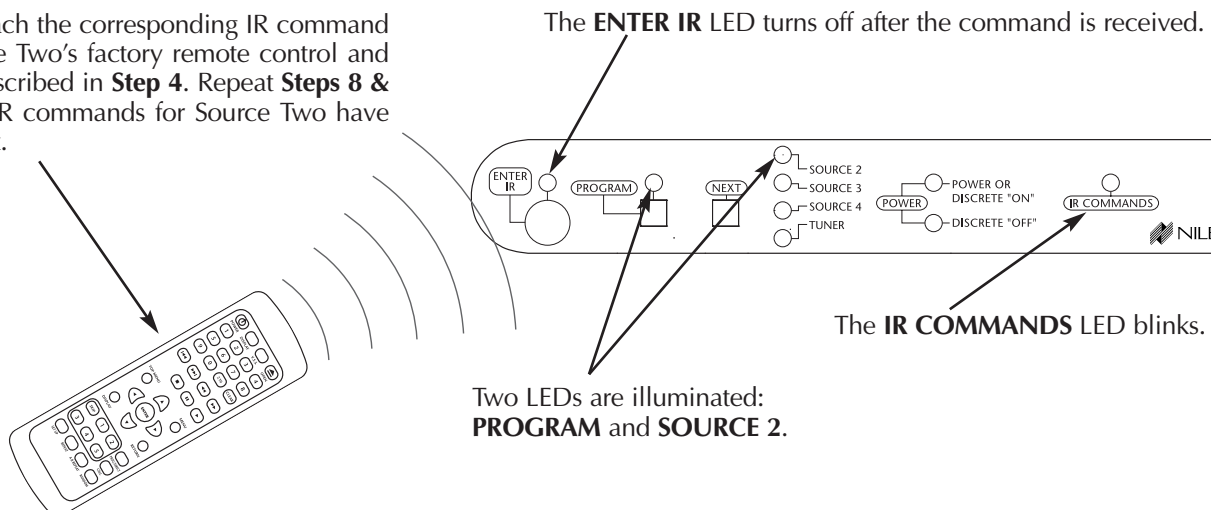
Step 7 - Press the **NEXT** button once.



Step 8 - Issue a Niles Function Key/Button IR command that will correspond to a Source IR command into the IR Sensor Window.

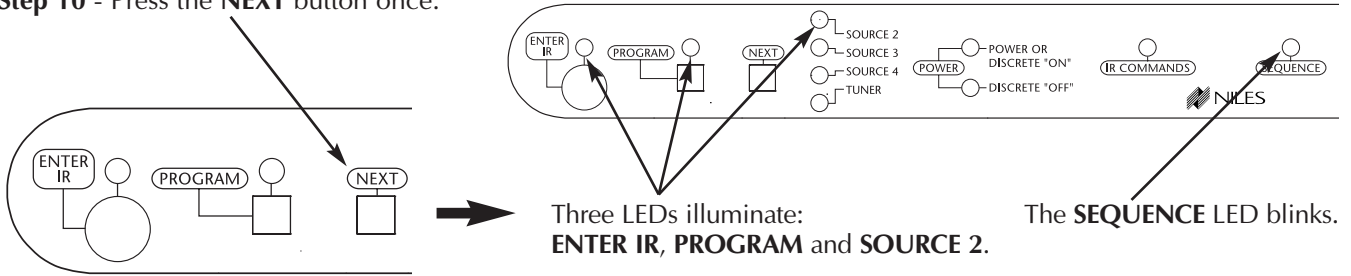


Step 9 - Teach the corresponding IR command from Source Two's factory remote control and test it as described in **Step 4**. Repeat **Steps 8 & 9** until all IR commands for Source Two have been taught.



SYSTEM PROGRAMMING STEPS

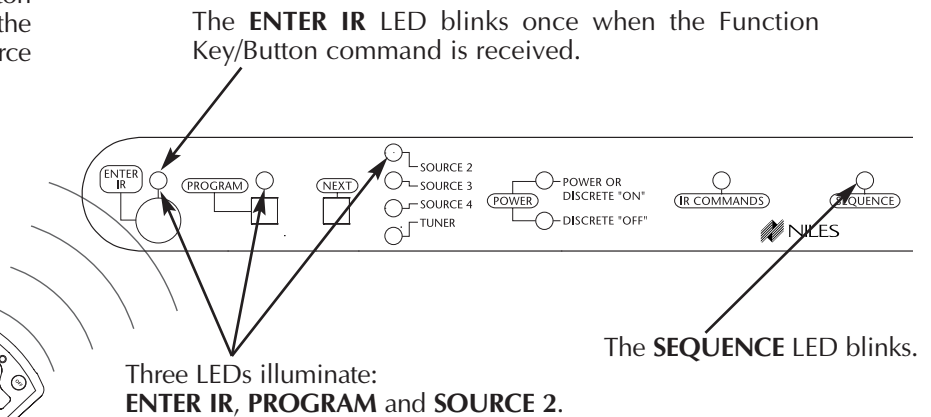
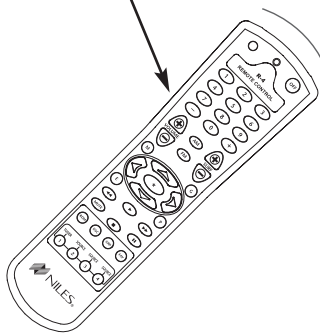
Step 10 - Press the **NEXT** button once.



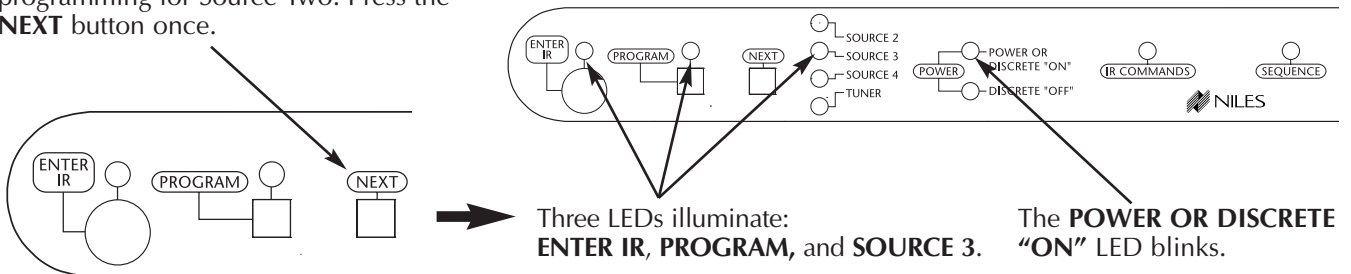
Step 11 - Press each Function Key/Button that corresponds to each step of the Sequence you wish to program for Source Two in the same order they will occur.

Note: To insert delays, use the Volume – or + buttons.
(Vol – = .5 sec., Vol + = 1 sec.)

Sequences can have up to 64 steps
(commands and/or delays).

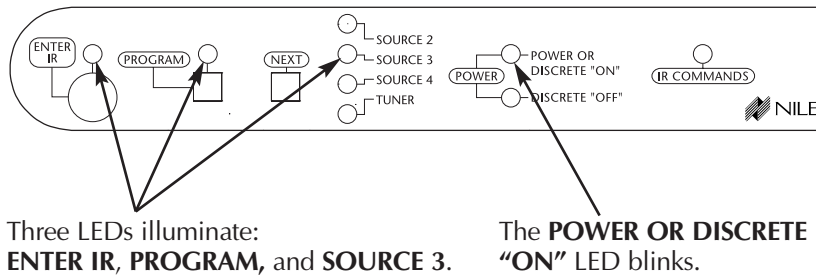


Step 12 - You have now completed the programming for Source Two. Press the **NEXT** button once.

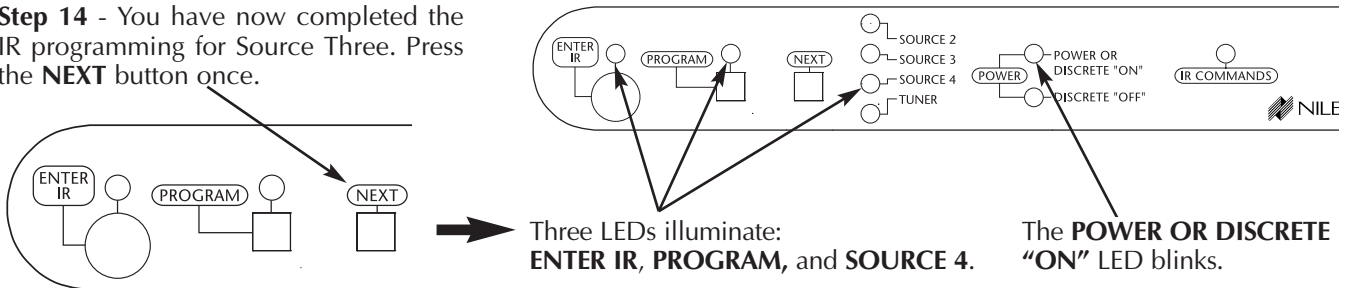


SYSTEM PROGRAMMING STEPS

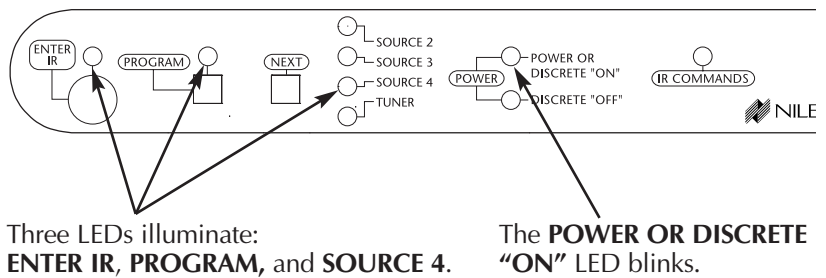
Step 13 - Repeat **Steps 2-11** to complete the IR programming for Source Three.



Step 14 - You have now completed the IR programming for Source Three. Press the **NEXT** button once.

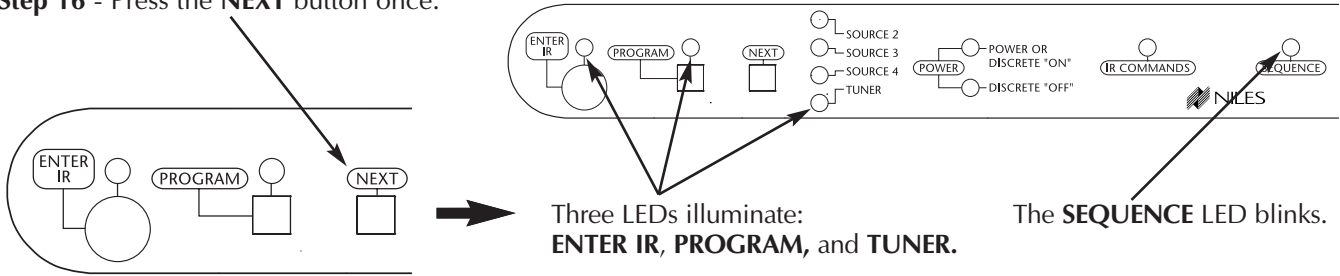


Step 15 - Repeat **Steps 2-11** to complete the IR programming for Source Four.



SYSTEM PROGRAMMING STEPS

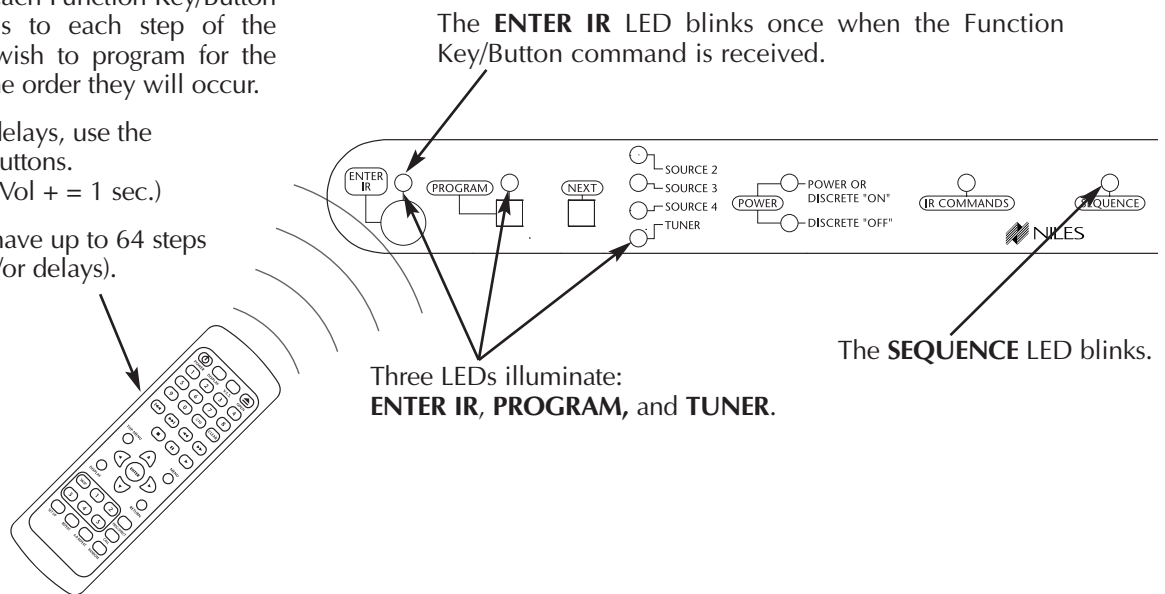
Step 16 - Press the **NEXT** button once.



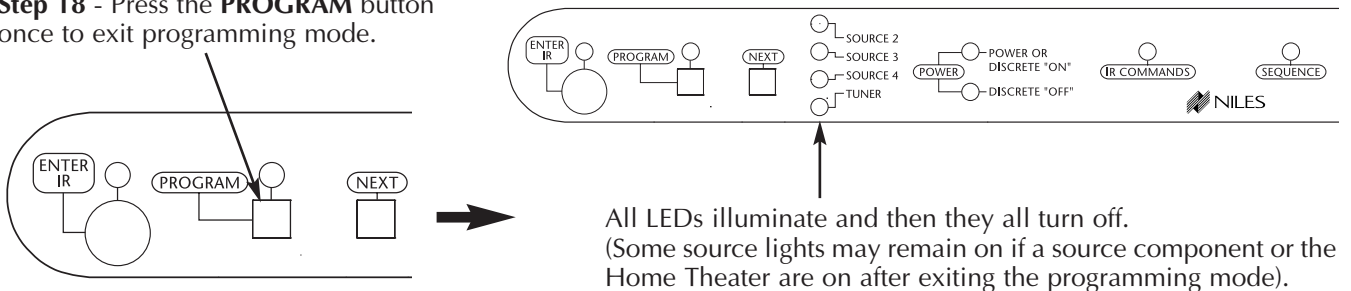
Step 17 - Press each Function Key/Button that corresponds to each step of the Sequence you wish to program for the Tuner in the same order they will occur.

Note: To insert delays, use the Volume – or + buttons.
(Vol – = .5 sec., Vol + = 1 sec.)

Sequences can have up to 64 steps
(commands and/or delays).



Step 18 - Press the **PROGRAM** button once to exit programming mode.



PROGRAM EDITING STEPS

SOURCE-POWER EDITING

These are the steps for editing the power ON/OFF commands for the source components.

Step 1. Press and Hold the Program button.

The Program LED lights RED, the Source 2 LED lights RED, Power/On LED Blinks RED, and the Enter IR lights RED.

Edit Power for Source 2: Continue editing from Step 2.

Edit Power for Source 3: Tap the NEXT button until the Source 3 LED lights RED, the Power/On LED Blinks RED, and the Enter IR lights RED. Continue editing from Step 2.

Edit Power for Source 4: Tap the next button until the Source 4 LED lights RED, the Power/On LED Blinks RED, and the Enter IR lights RED. Continue programming from Step 2.

Step 2. If the component has a single power IR command for both ON and OFF, teach the power IR command by pressing the power button on the component's factory remote.

or

If the component has a discrete ON and OFF command, teach the discrete ON command by pressing the ON button on the source component's remote control.

The Enter IR light blinks.

Step 3. To test the command, press the TEST button. If it does not operate the component as expected, teach and test the command again until it does.

Note: Repositioning the remote control when teaching the command can assist in capturing commands accurately.

Step 4. Tap the NEXT Button. The Power/ON LED turns OFF and the OFF LED Blinks RED.

Step 5. If the component has a single power command for both ON and OFF, press the NEXT button again and continue your programming of the system.

or

If the component has a discrete ON and OFF command, teach the discrete OFF command.

The Enter IR light blinks.

Step 6. To test the command, tap the TEST button. If it does not operate the component as expected, teach and test the command again until it does.

Note: Repositioning the remote control when teaching the command can assist in capturing commands accurately.

Step 7. Tap the program button to exit programming.

IR COMMAND EDITING

These are the steps for editing the individual IR commands for control of the source components.

Step 1. Press and Hold the PROGRAM button.

The Program LED lights RED, the Source 2 LED lights RED, the Power/On LED Blinks RED, and the Enter IR lights RED.

Edit IR Commands for Source 2: Tap the NEXT button until the Source 2 LED lights RED, and the IR Commands LED Blinks RED. Continue editing from Step 2.

Edit IR Commands for Source 3: Tap the NEXT button until the Source 3 LED lights RED, and the IR Commands LED Blinks RED. Continue editing from Step 2.

Edit IR Commands for Source 4: Tap the NEXT button until the Source 4 LED lights RED, and the IR Commands LED Blinks RED. Continue editing from Step 2.

Step 2. Press a function button on the Niles hand held remote control that corresponds to the source-component IR command you wish to teach.

The Enter IR lights RED.

Step 3. Using the source component's factory remote, teach the IR command.

The Enter IR LED turns OFF.

Step 4. To test the command, press the TEST button. If it does not operate the component as expected, repeat steps 2, 3 and 4 until it does.

Note: Repositioning the remote control when teaching the command can assist in capturing commands accurately.

Step 5. Repeat all steps until all the source-component IR commands have been taught.

Step 6. Tap the PROGRAM button to exit programming.

PROGRAM EDITING STEPS

SEQUENCE EDITING

These are the steps for programming the Sequences for control of the source components.

Step 1. Press and Hold the Program button.

The Program LED lights RED, the Source 2 LED lights RED, the Power/On LED Blinks RED, and the Enter IR lights RED.

Edit a Sequence for Source 2: Tap the NEXT button until the Source 2 LED lights RED, and the Sequence LED Blinks RED. Continue editing from Step 2.

Edit a Sequence for Source 3: Tap the NEXT button until the Source 3 LED lights RED, and the Sequence LED Blinks RED. Continue editing from Step 2.

Edit a Sequence for Source 4: Tap the NEXT button until the Source 4 LED lights RED, and the Sequence LED Blinks RED. Continue editing from Step 2.

Step 2. Press the keys on the Niles hand-held remote that correspond to the commands you wish to include in the sequence.

Note: Enter commands and delays in the order you wish them to occur, using the Volume – or + keys to include delays (Vol – = .5 sec, Vol + = 1 sec). As many as 64 commands and/or delays may be included. The Enter IR LED blinks when it receives a command.

Step 3. Press the program button to exit programming.

STORING TUNER PRESETS

Step 1. Select the desired AM or FM band with the Band Shift Button.

Step 2. Locate the desired station for preset, using the Station Scan Buttons.

Step 3. Press and hold the Preset Button (for more than three seconds) where you wish to store the currently tuned station.

The station display blinks when the station is stored to the Preset Button.

PROGRAM ERASING

Erasing Individual IR Commands

Step 1. Follow the same steps you would for the programming of the IR command you wish to erase.

Step 2. When the Enter IR LED lights (prompting you to teach an IR command), tap the Erase button instead of teaching a new IR command. The command that was previously stored is now erased.

Step 3. Continue erasing or press the PROGRAM Button to exit programming.

Erasing Individual Sequences

Step 1. Follow the same steps you would for the programming of the sequence you wish to erase.

Step 2. When the Enter IR LED lights (prompting you to enter the IR commands and/or delays for the sequence), press the Erase button instead of building a new sequence. The sequence that was previously stored is now erased.

Step 3. Continue programming or press the PROGRAM button to exit programming.

Erasing all IR Commands and Sequence Programming for Only One Source

Step 1. Press and Hold the Program button.

The Program LED lights RED, the Source 2 LED lights RED, the Power/On LED Blinks RED, and the Enter IR lights RED.

Erase all IR command and sequence programming for Source 2: Continue programming from Step 2.

Erase all IR command and sequence programming for Source 3: Quickly tap the next button until the Source 3 LED lights RED, and the Power/On LED Blinks RED. Continue programming from Step 2.

Erase all IR command and sequence programming for Source 4: Quickly tap the next button until the Source 4 LED lights RED, and the Power/On LED Blinks RED. Continue programming from Step 2.

Step 2. While the source you wish to erase is lit (2, 3, 4, or TUNER), press and hold the Program and Erase buttons until the Power/ON, the IR Commands, and the Sequence LEDs are all blinking.

Step 3. Release the Program and Erase buttons, and all programming for the selected source is erased.

Step 4. Continue programming, or press the Program button to exit programming.

PROGRAM EDITING STEPS

Erasing All Programming

Step 1. Press and Hold the Program button.

The Program LED lights RED, the Source 2 LED lights RED, the Power/On LED Blinks RED, and the Enter IR lights RED.

Step 2. Press and hold the Program, the Next, and the

Erase buttons until the Program, Power/ON, the IR Commands, and the Sequence LEDs are all blinking.

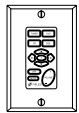
Step 3. Release the Program, the Next, and the Erase buttons, and all programming for the entire system is erased.

Step 4. Continue programming, or press and hold the Program button to exit programming.

ZR-4630 SYSTEM ACCESSORIES

Solo™ Master Keypad Module

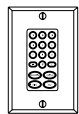
STOCK #
FG00807



Provides system activation, source selection, source control, and volume adjustment.

Numeric™ Accessory Keypad Module

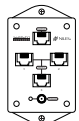
STOCK #
FG00809



Provides direct channel access for DSS receivers and direct track/disc access for CD and DVD changers.

Expander™ Master Keypad Connection Accessory

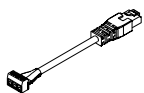
STOCK #
FG00853



Increases the number of Solo™ Master Keypad Modules that can be connected to a single zone of the ZR-4630.

IntelliPad® Ci Adapter Cable

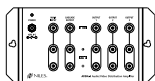
STOCK #
FG00852



Provides easy connection of IR Sensors to the Solo™ Master Keypad when using two-conductor shielded cable.

AVDA-3 Audio/Video Distribution Amplifier

STOCK #
FG00814



Source-level audio and base-band video distribution amplifier. Includes a stereo audio and video input, distributed to three audio/video outputs.

R-4 Accessory Remote

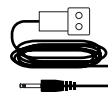
STOCK #
FG00895



Additional remote control for operation from zones installed with Niles IR Sensors.

IRC-1P FloodFlasher™

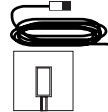
STOCK #
FG00932



IR FloodFlasher™. Connects with a 3.5mm mono mini-plug; 10' cable. Includes Velcro mounting system.

IRC-2P MicroFlasher™

STOCK #
FG00726



IR MicroFlasher™. Connects with a 3.5mm mono mini-plug; 10' cable. Includes light blocker.

Zone/Room Labels

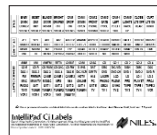
STOCK #
LA01021A



Zone/Room identification labels to place in the label slots for each zone of the ZR-4630.

IntelliPad® Ci Master Keypad Labels

STOCK #
LA00978A



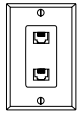
Additional Master Keypad identification labels to customize a Solo™ Master Keypad Module.

ZR-4630 SYSTEM ACCESSORIES continued

NET-2D Computer Network Convenience Outlets

ColorStock#

Almond	FG00858
Bone	FG00840
White	FG00842



Two eight-wire (RJ-45) modular jacks for computer network or IntelliPad Ci Master Keypad connections. Decora-style faceplate.

NET-2S Computer Network Convenience Outlets

ColorStock#

Almond	FG00859
Bone	FG00843
White	FG00844



Two eight-wire (RJ-45) modular jacks for computer network or IntelliPad Ci Master Keypad connections. standard-style faceplate.

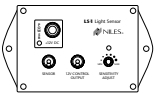
Special Note: RJ-45 jacks and the faceplates that make up with the network convenience outlets are available separately in our Jobsite® System.

SYNC ACCESSORIES

Many of the components in your system should have their power status “syncd” to the ZR-4630. The following accessories either sense that a component is on/off or actually turn the component(s) on/off.

LS-1 Light Sensor

STOCK #
FG00728



Senses the brightness of a component's front panel display and outputs a 12V DC sync signal when the display is brightest.

IPC-6 Programmable AC Power Controller

STOCK #
FG00272

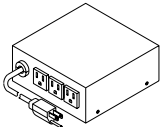
Six-outlet microprocessor-controlled power-management System with on/off sequencing.



*Rack Mount Panel available. Stock# FG00669

APC-2 Current-Sensing Outlet Switcher

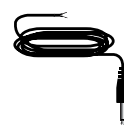
STOCK #
FG00254



Current-sensing outlet. Provides 12V DC sync connection via an accessory cable to the ZR-4630.

10' Bare-Wire to Mini-Plug Accessory Cable

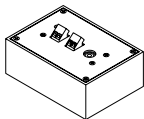
STOCK #
FG00724



Used to send sync signals to the 12V sync inputs of the ZR-4630. Connects with a 3.5mm mono mini-plug and flying leads.

OTI-512 Opto-Isolated Voltage Trigger

STOCK #
FG00319



Converts any voltage between 3V and 30V (AC or DC) to 12V DC sync. Useful in combination with an accessory cable with Proceed™, Fosgate™, Citation™ & Synthesis™ preamps.

10' Mini-plug to Mini-Plug Accessory Cable

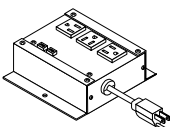
STOCK #
FG00933



Used to send sync signals to the 12V sync inputs of the ZR-4630. Connects with a 3.5mm mono mini-plug on each end.

AC-3 Voltage-Triggered AC Power Strip

STOCK #
FG00242



AC power strip with two voltage-triggered AC outlets and one unswitched AC Outlet.

12V DC/200mA Wall Adapter

STOCK #
FG00665



Provides a 12V DC sync signal to the ZR-4630 when plugged into a component's switched outlet.

TROUBLESHOOTING

TROUBLESHOOTING THE ZR-4630

Problem	Troubleshooting
The receiver has no lights on.	<p>Inspect the AC power cord. Be sure it is inserted firmly into the power-cord socket of the receiver.</p> <p>Check the AC power outlet. Verify that the outlet is providing power (i.e., a switched AC outlet).</p> <p>Ensure that the ZR-4630 is always plugged into an unswitched AC outlet. If you've checked the cord and the outlet, and you still have no lights, call Niles for service.</p>
The LCD Display shows error E1, E2, E3, E4, E5, E6.	Errors E1 through E6 mean that an internal problem exists and the ZR-4630 requires service.
The LCD Display shows error E7.	<p>Error E7 means one or more of the front-panel control or programming buttons is stuck in the depressed position.</p> <p>Check each of the buttons by pressing and releasing them.</p>
The LCD Display shows error E8.	<p>One or more of the ZR-4630's in an expanded system are not set to the proper Master/Slave mode.</p> <p>Refer to the Installation Settings of this manual for proper setup.</p>

SYSTEM INSTALLATION TROUBLESHOOTING

Problem	Troubleshooting
The keypad is connected, but no lights come on.	Test the keypad cable with an appropriate cable tester.
There is no IR control of the source components.	<p>The Sensors may be receiving some interference. Check the status LED.</p> <p>When using the Niles IRR-4D+ Wall Mount or the Niles TIR-1+ Tabletop IR Sensors, the Status LED should be illuminating green when the zone is on. The Status LED should be off when the zone is off, and it should be red when it is receiving a command.</p> <p>When using the Niles MS-1, MS-2 IR Sensors, the Status LED should be off when the zone is ON. It should only illuminate green when receiving an actual IR command.</p> <p>If the LEDs stay constantly red (or green when using MS-1 or MS-2), that is a sign of interference. Identify the source of interference and remove it, or move the sensor to a place where it doesn't have interference. Sources of interference may include dimmer switches, fan motor switches, televisions (especially plasma televisions), and sunlight.</p>
Some IR commands work for a source and some don't.	You may have captured some IR commands incorrectly. Testing all IR commands as you capture them with the IR test feature will avoid this.

SPECIFICATIONS

ZR-4630 MultiZone Receiver

AMPLIFIER SECTION

Continuous Average Power Output (FTC)

All Channels: 30W per channel min. RMS at 8 ohms, any two channels driven from 20 Hz to 20 kHz with no more than .08% THD.

37W per channel min. RMS at 4 ohms, any two channels driven from 20 Hz to 20 kHz with no more than .8% THD.

Frequency Response: 5 Hz to 50 KHz +/- 3dB

Input Sensitivity: 160 mv for 1W output , 890 mv for full output (30W) with volume control set to maximum.

Input Impedance: 20 k ohms

Signal Noise Ratio: >= 85 dB

TUNER SECTION

FM

Frequency Range: 87.5 – 108 mHz

IHF Sensitivity: <= 15dBu (19KHz LPF ON THD = 3%)

IF Rejection: >= 55dB

Image Rejection: >= 30dB

Selectivity: >= 55dB (+/- 400kHz)

Usable Sensitivity: <= 24dBu (S/N = 50dB)

S/N Ratio: >= 62dB

Separation: >= 25dB

AM Rejection: >= 50dB

AM

Frequency Range: 530 – 1710 kHz

IF Rejection: >= 40dB

Image Rejection: >= 30dB

Selectivity: >= 20dB (+/- 20kHz)

Usable Sensitivity: <= 63dBu (S/N = 20dB)

S/N Ratio: >= 42dB

GENERAL

Power Supply: AC 120V, 60 Hz

Power Consumption: 600W Maximum

Dimensions: 17" wide x 5" high (including feet) x 15" deep

Weight: 28 lbs

REMOTE CONTROL

Transmitter: Infrared

Signal Range: Approx. 9m, 30'

Power Supply: Two "AA" batteries (1.5V x 2)

NOTES

[illegible]

NOTES

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



Niles Audio Corporation

12331 S.W. 130 Street, Miami, FL 33186

Mailing Address: P.O. Box 160818 Miami, FL 33116

Customer Service: 1-800-BUY-HIFI (1-800-289-4434)

Phone: 305-238-4373 • Fax: 305-238-0185

Visit us on the web at **www.nilesaudio.com**